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The following Field Service Regulations, revised by the General Staff of the Army, are approved and published for the information and government of the Regular Army and Organized Militia of the United States.

By order of the Secretary of War:

J. FRANKLIN BELL,
Major-General, Chief of Staff.

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FIELD SERVICE REGULATIONS, U. S. ARMY.

ARTICLE I.

ORGANIZATION.

LAND FORCES OF THE UNITED STATES.

1. The organized land forces of the United States consist of the Regular Army and of the Organized Militia when called into the military (land) service of the United States.

2. In peace the *Army of the United States* consists, ordinarily, of the Regular Army; but whenever the United States is invaded or in danger of invasion from any foreign nation, or of rebellion against the authority of the Government of the United States, or the President is unable with the regular forces at his command to execute the laws of the Union, he may call into the military service of the United States all or any part of the militia organized as a land force.

In war, or when war is imminent, the Army of the United States, after the organized militia has been called into service, may be further augmented by the employment of volunteers.

3. The Regular Army of the United States consists of regiments of infantry, cavalry, and field artillery, a coast artillery corps, general officers, a general staff corps, an adjutant-general's department, an inspector-general's department, a judge-advocate-general's department, a quartermaster's department, a subsistence department, a medical department, a pay department, a corps of engineers, an ordnance department, a signal corps, a military academy, chaplains, and such other officers and enlisted men as are provided for by law.[a]

[a] After January 21, 1910, the organization, armament, and discipline of the organized militia in the several States, Territories, and the District of Columbia will be the same (with some minor exceptions) as that which is now or may hereafter be prescribed for the Regular Army.

UNITS OF ORGANIZATION.

4. The company and regiment are both administrative and tactical units; the battalion and brigade are, as a rule, tactical only. The division is the great administrative and tactical unit and forms the basis for army organization. A *separate brigade* is a command designated as such in orders from competent authority.

5. Permanent brigades and divisions are created by the War Department. A brigade normally consists of the headquarters and three regiments of infantry. It is the appropriate command of a brigadier-general.

For instruction at field exercises, maneuvers, etc., temporary brigades and divisions may be formed and the necessary staffs provided.

6. Division.—A division normally consists of—

Troops:
- Headquarters.
- 3 brigades.
- 1 regiment of cavalry.
- 1 brigade of field artillery, 2 regiments.
- 1 pioneer battalion of engineers.
- 1 field battalion of signal troops.
- 4 ambulance companies.
- 4 field hospitals.

Service of supply:
- Officers and assistants.
- 1 ammunition train.
- 1 supply train (including sanitary reserve and field bakery).
- 1 pack train. Unless detached therefrom, the pack train accompanies the supply train.

A division is the appropriate command of a major-general.

7. A *cavalry brigade* consists of the headquarters and two or more cavalry regiments, three being the normal organization. When the brigade acts independently, horse artillery is attached.

A *cavalry division* consists of—

Troops:
- Headquarters.
- 2 or more cavalry brigades, 3 being the normal cavalry component.
- 1 regiment of horse artillery.
- 1 pioneer battalion of engineers (mounted).
- 1 field battalion of signal troops.
- 2 ambulance companies.
- 2 field hospitals.

Service of supply:
- Officers and assistants.
- 1 ammunition train.
- 1 supply train (including sanitary reserve).
- 2 or more pack trains. Unless detached therefrom, the pack trains accompany the supply train.

A light bridge train is attached when necessary.

8. Divisions or brigades operating independently have the necessary additional troops and staff attached. Detachments may also be organized, the composition and staffs being determined by the duty to be performed.

9. Divisions, including cavalry divisions, receive numerical designations in the order of their creation. Brigades are designated First, Second, etc., in each division.[a]

10. Field Army.—A command composed of two or more divisions, and the necessary auxiliary troops, constitutes a *field army*. It receives a numerical designation, and is the appropriate command of a lieutenant-general. The auxiliary troops of a field army are ordinarily—

1 cavalry brigade or division.
1 regiment or brigade of infantry.
1 regiment or brigade of heavy artillery, normally 1 battalion for each division in the field army.
1 ponton battalion.
1 aero-wireless battalion.
1 ammunition train.
1 supply train.
1 ambulance company.
1 field hospital.

For purposes of administration, marching, and camping, the auxiliary troops (less the cavalry) of a field army are generally united in rear of the divisions and when so united form the "auxiliary division." They are sent to the front when required. To this division may also be attached siege artillery and an engineer park, according to the nature of the operations, and cavalry when necessary. As far as practicable, the auxiliary division is maintained near the head of the line of communications.

11. Army.—A command composed of two or more field armies constitutes an *army*. It receives a territorial designation and is the appropriate command of a general. Field armies and armies are created only by authority of the President.

12. Line of Communications.—For each field army or important expeditionary force about to take the field, a *base* is selected and equipped and a service of the *line of communications* established, both under the control of the commander of the field army or expeditionary force.

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[a] A list of the flags and pennants by which brigades, divisions, and field armies are distinguished is given in Appendix A.

The line of communications includes the base where depots of supplies and hospitals are maintained, and the supply or issue depots at the front. As the line advances intermediate bases may be established where supplies can be collected. When necessary for purposes of administration or defense, the line may be divided into sections and a subordinate commander assigned to each.

The duty of the commander of the line of communications is to keep the troops at the front provided with ample supplies of all kinds that may be required, and to transport the sick and wounded to the base as rapidly as possible. To accomplish this he keeps the rail or water head of the line as near the field army as possible, and establishes branch supply depots or stations in reach of the division field trains, using field railway or wagon transportation. The evacuation hospitals are generally placed near these division supply depots so that advantage may be taken of all available transportation.

The nature and amount of supplies required from the line of communications are indicated in orders from the commander of the field army, but the supplies are sent direct to the divisions or separate units.

When two or more field armies are united into an *army*, each field army, as a rule, maintains its own line of communications.

COMMANDERS AND STAFFS.

13. Command.—In case of the death, disability or absence of the commander of a body of troops, the next in rank in that body exercises command thereof until the commander returns or a new one is provided.

14. In matters relating to courts-martial, the supply service, and money and property accountability, the administrative control vested in commanders of territorial departments devolves, in the field, upon division commanders under the orders of the commander of the field army or department. Commanders of *separate brigades* have the powers of division commanders.

15. Headquarters.—The *headquarters* of a command is the commander's official residence, or place from which his orders are issued; the term is also used to designate collectively the commander, his staff and personnel attached thereto. Battalions, squadrons and higher units have headquarters.

The headquarters of brigades and higher units are provided with suitable guards, and the commanders of such guards are

vested with authority to establish, arrange and command the headquarters camps. They direct the movements of, and furnish the guards for, the headquarters trains, and preserve order at headquarters.

In the field one squadron of the divisional cavalry of each division is, as a rule, detailed as provost guard, small guards being detached therefrom for duty at division headquarters and at the headquarters of the infantry brigades. The squadron commander acts as provost marshal of the division. He has charge of the division postal service and performs duties similar to those of the provost marshal general of a field army. The commanders and staffs of brigades, divisions, and field armies are provided with orderlies from the headquarters guards.

16. Staffs.—All military units larger than a company are provided with staffs, whose number and rank vary with the size of the command. In units larger than a brigade, and in separate commands under general officers, the staff service is under the supervision of an officer, when practicable, of the general staff, designated as *chief of staff*.

The staffs of commanders of the normal brigades and higher units herein authorized are as follows:

(*a*) *Brigade, including cavalry brigade.*

1 brigade adjutant, major—(1 clerk, civilian).
2 aides, lieutenants.

(*b*) *Division, including cavalry division.*

1 chief of staff, colonel.
1 assistant chief of staff, major, or captain.
1 division adjutant, major.
1 division inspector, major.
1 judge-advocate, major.
} 6 clerks, civilian.
1 chief quartermaster, lieutenant-colonel (sec. 30).
1 chief commissary, lieutenant-colonel (sec. 31).
1 chief surgeon, lieutenant-colonel (sec. 33).
3 aides, captains or lieutenants.

When necessary, the commanders of the battalions of engineers and signal troops may be directed, in addition to their other duties, to act, respectively, as chief engineer and chief signal officer. When a division acts independently a chief engineer (lieutenant-colonel) is detailed on the staff of the division commander.

(*c*) *Auxiliary division.*

1 chief of staff, lieutenant-colonel.
1 division adjutant, major.
1 division inspector, major.
1 judge-advocate, major.
} 3 clerks, civilian.
1 chief quartermaster, major (sec. 30).
1 chief commissary, major (sec. 31).
1 chief surgeon, major (sec. 33).
Personal aids.

(*d*) *Field army.*

1 chief of staff, brigadier-general.
1 adjutant-general, colonel.
1 inspector-general, colonel.
1 judge-advocate, colonel, or lieutenant-colonel.
1 chief quartermaster, colonel.
1 chief commissary, colonel.
1 chief surgeon, colonel.
1 chief paymaster, colonel.
1 chief engineer, colonel.
1 chief ordnance officer, colonel, or lieutenant-colonel.
1 chief signal officer, colonel, or lieutenant-colonel.
1 provost marshal general, brigadier-general, or colonel.
3 aides with the rank of lieutenant-colonel.
} Each assisted by one or more subordinates and the necessary clerical force.

(*e*) *Army.*

1 chief of staff, major-general.

Such other staff officers as the general in command deems necessary.

(*f*) *Line of communications.*

The commander is provided with the necessary troops and staff. His staff includes such of the following subordinates as the situation requires:

1 chief of staff.
1 commander of the base.
1 adjutant.
1 inspector.
1 chief quartermaster.
1 chief of the railway service.
1 chief of transport by water.
1 chief commissary.
1 chief surgeon.
1 chief paymaster.
1 chief engineer.
1 chief ordnance officer.
1 chief signal officer.
1 provost marshal.
Personal aids.

Each staff officer is provided with the necessary assistants, troops, working force and funds to enable him to place his particular line of work on the most efficient basis possible.

17. Chief of Staff.—The chief of staff should enjoy the complete confidence of his commander and a considerable degree of independence in the performance of his ordinary duties. In all matters the wishes and directions of the commander form the basis of his action. After working out the necessary details he converts the ideas and decisions of the commander into orders, conveys them to the troops and sees that they are executed. He should be informed at all times in regard to the supplies, strength, armament, equipment, health, marching powers, and morale of the troops, and be prepared to render a report thereon. It is his duty to bring to the notice of the commander all matters requiring attention and, when called upon, to indicate the action he deems necessary or desirable.

He is responsible for the performance of the necessary reconnaissance, for the security of the command, and should be familiar with all details involved in the instructions of the commander relative to the marching, fighting, and camping or quartering of the troops. He establishes an *information division*, and exercises a general supervision over the operations of all the staff corps and departments, including engineering operations, and over all records and returns, and sees that a war diary is kept.

18. The officers of the Adjutant-General's and Inspector-General's departments perform the duties appropriate to their offices in the field.

19. Chief Engineer.—The chief engineer of an army exercises general supervision over the engineer troops serving therewith and over engineering operations, including the preparation and reproduction of field maps. He assists in the selection of defensive positions, supervises the location and design of the field works, and may be charged with the construction of the more important fortifications; he has general charge of the engineering features of siege operations, the construction and maintenance of military roads, bridges, piers, and wharves, and the construction, maintenance, and operation of railroads under military control; he supervises the demolitions ordered by the commander, and the laying out and preparation of permanent camps. To carry out his duties he should have the necessary military assistants, ample funds, and authority to employ civilian labor, etc. Requisitions for funds, disbursements, and the care and disposal of property pertaining to work in charge of engineer officers is subject to the regulations prescribed for the government of the Engineer Department.

The duties of chief engineers of field armies and of divisions are similar to those of the chief engineer of an army, differing only in scope and degree.

At the close of a campaign, the chief engineer of a division, field army, or army, will submit, through his commander, a report of all that concerns his specialty, to the Chief of Engineers.

20. Chief Signal Officer.—The chief signal officer of an army or smaller command exercises general supervision over the signal service connected therewith. He is charged with the construction, operation, and maintenance of the signal service *lines of information*, and commands the signal troops not specially detached. He keeps himself thoroughly informed of the plans of the commander, and of the positions of the enemy, and, under the supervision of the chief of staff, establishes such signal lines and stations as will contribute most effectively to the success of the operations. He submits reports of operations to the chief of staff, and forwards copies thereof to the Chief Signal Officer at Washington.

Communications transmitted by the signal service are always confidential, and will not be revealed except to those entitled to receive or examine them.

PROVOST MARSHAL GENERAL.

21. The provost marshal general has under his command the force (detailed from the auxiliary division) necessary to preserve proper police throughout the command. He protects the inhabitants of the country from pillage and violence; has charge of the secret service; keeps a list and description of all retainers to camp and camp followers, and watches their conduct; follows the column on the march and brings up stragglers, arrests skulkers, and fugitives from the battlefield, and takes charge of all prisoners of war and deserters from the enemy. In addition he has charge of the postal service of the command.

SUPPLY DEPARTMENTS.

22. The *chiefs* of the supply departments organize the administration of their respective services, and exercise the supervision over details necessary to secure efficiency. While the provision and distribution of supplies constitutes one of the responsibilities of the commander, who issues orders and instructions of a general nature on the subject, the means and methods of obtaining and distributing such supplies are looked after by the chiefs of the several supply services, whose duties are performed in conformity with prescribed regulations. Supply officers of a field army, as a rule, have no property accountability, their duties being purely administrative.

Chiefs of the supply services render reports, through military channels, to their bureaus in the War Department, furnishing prompt and full information as to the present and prospective needs of the army, with such suggestions for the improvement of the efficiency of their service as may require the action of higher authority.

BUREAU OF INFORMATION FOR PRISONERS OF WAR.

23. At the beginning of hostilities a bureau of information for prisoners of war will be organized in the War Department at Washington under a superintendent with suitable rank, and places of internment under military officers known as commandants, will be established at convenient points. At each place of internment and at the bureau of information an adequate clerical force will be maintained so that all information required by the laws and usages of war on land can be properly kept.

The superintendent will exercise general supervision over all places of internment, and the commandants will submit to him such reports and information as may be required. (Secs. 313–329.)

Unless otherwise ordered, prisoners of war in the field are turned over to the provost marshal of the line of communications and are sent by him to such places as may be designated by the War Department.

DETAILS OF ORGANIZATION.

THE LINE.

24. I. *Infantry.*[a]

Company:
- 1 captain.
- 1 first lieutenant.
- 1 second lieutenant.
- 1 first sergeant.
- 1 quartermaster sergeant.
- 5 sergeants (1 as mess sergeant).
- 9 corporals.
- 3 lance corporals.
- 2 cooks.
- 2 musicians.
- 1 artificer.
- 84 privates (1 as wagoner).
- 1 field wagon.

108 total enlisted.

Provisional machine gun company:[b]
- 3 officers (detailed by regimental commander).
- 7 sergeants. } (Detailed and organized as a company).
- 9 corporals. }
- 92 privates. }
- 6 guns.
- 30 pack mules.[c]
- 1 field wagon.

108 total enlisted.

Battalion:
- 1 major.
- 1 adjutant (first lieutenant).
- 1 quartermaster and commissary (second lieutenant).
- 1 sergeant-major (mounted).
- 1 sergeant (detailed as supply sergeant).
- 6 privates (detailed, 2 as drivers, 1 as wagoner, and 3 as mounted orderlies).
- 2 ammunition wagons.
- 1 field wagon.
- 4 companies.

15 officers (3 mounted).
440 enlisted men (4 mounted).
2 ammunition wagons.
5 field wagons.

---

[a] To provide enlisted men for the details indicated, the above strength of each company is increased by 1 sergeant, 1 corporal, and 12 privates. These additional men are included in the aggregate enlisted strength of the regiment.

[b] This organization for the machine gun company will be used until the organization applicable to the new machine gun is perfected and published. One section is armed with rifles.

[c] Grain in battalion headquarters wagons.

Regiment:
- 1 colonel.
- 1 lieutenant-colonel.
- 1 adjutant. } Captains.
- 1 quartermaster. }
- 1 commissary. }
- 1 chaplain.
- 1 sergeant-major (mounted).
- 1 quartermaster sergeant (mounted).
- 1 commissary sergeant.
- 2 color sergeants.
- 1 sergeant (detailed as trumpeter sergeant—mounted).
- 9 privates (detailed, 2 as horseshoers, 1 as farrier, 1 as saddler, 1 as wagoner, 4 as mounted orderlies).
- 1 sergeant. } (Detailed detachment of mounted scouts).
- 3 corporals. }
- 17 privates. }
- 1 chief musician. } Band (36).
- 1 principal musician.
- 1 drum major.
- 4 sergeants.
- 8 corporals.
- 1 cook.
- 12 privates.
- 8 privates (detailed, 1 as cook and 1 as wagoner).
- 2 field wagons.
- 3 battalions.
- 1 machine gun company.

- 51 officers (15 mounted).
- 1,500 enlisted men (40 mounted).
- 30 pack mules.
- 6 ammunition wagons.
- 18 field wagons.
- 4 mules (extra team). [a] (Sec. 34).

Attached sanitary troops:
- 1 major.
- 3 captains and lieutenants.
- 1 sergeant, first class.
- 3 sergeants and corporals.
- 20 privates, first class and privates (1 as wagoner).
- 1 field wagon.
- 1 pack mule.
- 4 officers (mounted).
- 24 enlisted men (8 mounted).

---

[a] The extra team mules in all regimental organizations are cared for by the regimental headquarters detachment. All field and ammunition wagons are four-mule.

NOTE.—In regiments of infantry, cavalry, and artillery the trumpeter sergeant is orderly for the commander. An orderly for the chaplain is detailed from the band.

25. II. *Cavalry.*[a]

Troop:
- 1 captain.
- 1 first lieutenant.
- 1 second lieutenant.
- 1 first sergeant.
- 1 quartermaster sergeant.
- 5 sergeants (1 as mess and 1 as stable sergeant).
- 7 corporals.
- 2 cooks.
- 1 horseshoër.
- 1 farrier.
- 1 saddler.
- 1 wagoner.
- 2 trumpeters.
- 64 privates (1 as wagoner).
- 2 field wagons.

86 total enlisted.

Provisional machine gun troop:[b]
- 3 officers (detailed by regimental commander).
- 7 sergeants, 7 corporals, 72 privates (detailed and organized as a troop).
- 6 guns.
- 30 pack mules.[c]
- 2 field wagons.

86 total enlisted.

Squadron:
- 1 major.
- 1 adjutant (first lieutenant).
- 1 quartermaster and commissary (second lieutenant).
- 1 sergeant-major.
- 1 sergeant (detailed as supply sergeant).
- 5 privates (detailed, 1 as driver, 1 as wagoner, and 3 as orderlies).
- 1 ammunition wagon.
- 1 field wagon.
- 4 troops.

15 officers.
351 enlisted men (337 mounted).
- 1 ammunition wagon.
- 9 field wagons.

---

[a] To provide enlisted men for the details indicated, the enlisted strength of the several troops in the regiment is increased so as to supply a total of 11 sergeants, 7 corporals, and 102 privates. These additional men are included in the aggregate enlisted strength of the regiment.

[b] This organization for the machine gun troop will be used until the organization applicable to the new machine gun is perfected and published.

[c] Grain in squadron headquarters wagons.

Regiment:
- 1 colonel.
- 1 lieutenant-colonel.
- 1 adjutant, 1 quartermaster, 1 commissary. } Captains.
- 1 chaplain.
- 2 veterinarians.
- 1 sergeant-major.
- 1 quartermaster sergeant.
- 1 commissary sergeant.
- 2 color sergeants.
- 1 sergeant (detailed as trumpeter sergeant).
- 7 privates (detailed, 1 as horseshoer and farrier, 1 as saddler, 1 as wagoner, 4 as orderlies).
- Band (36):
  - 1 chief musician.
  - 1 chief trumpeter.
  - 1 principal musician.
  - 1 drum major.
  - 4 sergeants.
  - 8 corporals.
  - 1 cook.
  - 11 privates.
  - 8 privates (detailed, 1 as cook and 1 as wagoner.
- 2 field wagons.
- 3 squadrons.
- 1 machine gun troop.

51 officers.
2 veterinarians.
1,188 enlisted men (1,140 mounted).[a]
30 pack mules.
3 ammunition wagons.
31 field wagons.
4 mules, extra team. (Sec. 34)

Attached sanitary troops:
- 1 major.
- 3 captains and lieutenants.
- 1 sergeant, first class.
- 3 sergeants and corporals.
- 20 privates, first class, and privates (1 as wagoner).
- 1 field wagon.
- 1 pack mule.

4 officers (mounted).
24 enlisted men (22 mounted).

---

[a] The wagoners and 1 cook in each troop and 1 in the band ride on wagons.

26. III. *Field artillery.*[a]

LIGHT.

Battery:
- 1 captain.
- 2 first lieutenants.
- 2 second lieutenants.
- 1 first sergeant (m).
- 1 quartermaster sergeant (m).
- 1 stable sergeant (m).
- 7 sergeants (1 as mess sergeant) (m).
- 13 corporals
- 7 lance corporals } (16 m).
- 1 chief mechanic (m).
- 1 horseshoer (m).
- 6 mechanics (1 as horseshoer, 1 as saddler, and 1 as wheelwright) (m).
- 3 cooks.
- 3 musicians (m).
- 127 privates (4 as wagoners) (3 m).
- 4 guns.
- 12 caissons.
- 1 store wagon.
- 1 forge.
- 1 pair (extra) of lead and 1 of wheel horses.
- 4 field wagons.

171 total enlisted (40 m).

Battalion:
- 1 major.
- 1 adjutant (captain).
- 1 quartermaster and commissary (first or second lieutenant).
- 1 sergeant-major (m).
- 1 quartermaster sergeant (m).
- 2 mounted orderlies.
- 7 corporals (detailed, 3 as agents, 1 as signaler and telephone operator, 3 as artillery scouts) (m).
- 7 privates (detailed, 2 as drivers—reel cart, 1 as orderly, 1 as wagoner, 3 as artillery scouts—4 m).
- 1 reel cart.
- 1 field wagon.
- 3 batteries.

18 officers (m).
531 enlisted men (135 m).
12 guns.
36 caissons.
3 store wagons.
3 forges.
1 reel cart.
12 horses, extra pairs.
13 field wagons.

[a] To provide enlisted men for the details indicated, the enlisted strength of the several batteries in the regiment is increased so as to supply a total of 5 sergeants, 16 corporals, and 33 privates. These additional men are included in the aggregate enlisted strength of the regiment.

m=Individually mounted.

Regiment:
- 1 colonel.
- 1 lieutenant-colonel.
- 1 adjutant.
- 1 quartermaster. } Captains.
- 1 commissary.
- 1 chaplain.
- 2 veterinarians.
- 1 sergeant-major (m).
- 1 quartermaster sergeant (m).
- 1 commissary sergeant (m).
- 2 color sergeants (m).
- 5 mounted orderlies.
- 5 sergeants (detailed, 1 as trumpeter sergeant, 2 as agents, 1 as signaler and telephone operator and in charge of telephones, 1 in charge of artillery scouts) (m).
- 2 corporals (detailed as artillery scouts) (m).
- 11 privates (detailed, 2 as drivers-reel cart, 2 as horseshoers, 1 as farrier, 1 as saddler, 1 as wagoner, 1 as mounted orderly, 3 as artillery scouts—7 m).
- 1 chief musician.
- 1 chief trumpeter.
- 1 principal musician.
- 1 drum major.
- 4 sergeants.
- 8 corporals.
- 1 cook.
- 11 privates.
- 8 privates (detailed, 1 as cook and 1 as wagoner). } Band 36 (34 mounted), 1 cook, and 1 wagoner, ride on wagon.
- 1 reel cart.
- 2 field wagons.
- 2 battalions.

42 officers (m).
2 veterinarians (m).
1,126 enlisted men (328 m).
- 24 guns.
- 72 caissons.
- 6 store wagons. } 6-horse.
- 6 forges.
- 3 reel carts (4-horse).
- 24 horses, extra pairs.
- 28 field wagons.
- 4 mules, extra team.

(Sec. 34).

Attached sanitary troops:
- 1 major.
- 2 captains and lieutenants.
- 1 sergeant, first class.
- 2 sergeants and corporals.
- 18 privates, first class, and privates (1 as wagoner).
- 1 field wagon.
- 1 pack mule.

3 officers (m).
21 enlisted men (19 mounted).

Horse artillery.—The organization of a regiment of horse artillery is the same as that of a regiment of light artillery, except that in each battery all the corporals and 68 privates are individually mounted, and the number of field wagons is increased to 5, necessitating the detail of 5 instead of 4 privates as wagoners.

Mountain artillery.—The organization of mountain artillery as to personnel is the same as that of light artillery. Transportation is by pack mule. The organization will be published as soon as the details for the new mountain gun have been worked out.

IV. *Engineers.*[a]

27. Under existing law the enlisted force of the Corps of Engineers consists of 1 band and 3 battalions. The band is organized the same as infantry bands, and the battalions consist of 4 companies each. The enlisted men and the officers serving with the organized battalions constitute a part of the *line* of the army.

For service in campaign, engineer troops will be provisionally organized as follows:

For each division, including cavalry divisions, 1 pioneer battalion of 3 pioneer companies. Engineer troops may also be attached to auxiliary divisions.

For each field army, 1 ponton battalion of 3 ponton companies.

PIONEER COMPANY.

(For service with infantry division.)

1 captain.
2 first lieutenants.
1 second lieutenant.
1 first sergeant.
1 quartermaster sergeant.
12 sergeants (1 as mess and 1 as stable sergeant).
18 corporals.
2 cooks.
2 musicians.
64 privates, first class } 1 as cook, 1 as horseshoer, 1 as farrier, 1 as saddler,
64 privates, second class } 3 as drivers, 2 as wagoners.
3 wagons (tools, explosives, etc.) (4-mule).
6 pack mules.
2 riding mules.
2 field wagons.

164 total enlisted.

[a] To provide enlisted men for the details indicated, 2 sergeants and 4 privates for each battalion are added to the strength of those companies having less than 164 enlisted men.

The following are mounted:

1 captain.
2 first lieutenants.
1 second lieutenant.
2 sergeants.
3 corporals.
1 cook.
18 privates, first and second class.

For duty with cavalry divisions, the strength of a pioneer company is decreased by 4 sergeants, 8 corporals, 26 first and 26 second-class privates, giving a maximum enlisted strength of 100. In such companies all officers and enlisted men (except the drivers, wagoners, and one cook) are mounted.

PIONEER BATTALION.

1 major.
1 adjutant (captain).
1 supply officer (first lieutenant).
1 sergeant-major (mounted).
1 quartermaster sergeant (supply sergeant—mounted).
2 color sergeants (detailed).
5 privates (detailed—1 as driver, 1 as wagoner, and 3 as mounted orderlies).
1 map wagon (4-mule).
1 field wagon.
3 companies.

15 officers (mounted).
309 enlisted men (mounted battalions).
501 enlisted men (unmounted battalions) (77 mounted).
10 wagons (tools, explosives, etc.).
18 pack mules.
6 riding mules.
7 field wagons (Sec. 34).

ATTACHED SANITARY TROOPS.

3 captains and lieutenants.
3 sergeants and corporals.
6 privates, first-class and privates.

3 officers (mounted).
9 enlisted men (6 mounted).

PONTONIERS.

The organization of *ponton companies* and *battalions* as to personnel is the same as that of pioneer companies and battalions except that each company has—

2 horseshoers.
2 farriers.
2 saddlers.
2 wagoners.

and the following mounted personnel:

1 captain.
2 first lieutenants.
1 second lieutenant.
2 sergeants.
4 corporals.

PONTON TRANSPORTATION.

Company:
2 divisions bridge equipage.
2 field wagons.
Battalion headquarters:
1 led horse.
1 field wagon.
Battalion complete:
6 divisions [a] bridge equipage { 92 wagons (448 mules). 1 led horse. 7 field wagons.

One division, heavy equipage (225 feet of bridge) consists of—

8 ponton wagons	6-mule	16 wagons; 84 mules.
2 trestle wagons	6-mule	
4 chess wagons	4-mule	
1 tool wagon	4-mule	
1 forge wagon	4-mule	

One division, light equipage (186 feet of bridge, canvas pontons) consists of—

8 ponton wagons	4-mule	14 wagons; 56 mules.
2 trestle wagons	4-mule	
2 chess wagons	4-mule	
1 tool wagon	4-mule	
1 forge wagon	4-mule	

V. *The Coast Artillery Corps.*

28. The coast artillery is the artillery charged with the care and use of the fixed and movable elements of land and coast fortifications, including the submarine mine and torpedo defense. It consists of a chief of coast artillery and the officers and enlisted men authorized by law for that corps.

The enlisted force consists of noncommissioned staff officers, bands, and companies.

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[a] Normally consisting of 4 divisions of heavy and 2 divisions of light equipage.

NONCOMMISSIONED STAFF.

Sergeants-major, senior grade.
Master electricians.
Engineers.
Electrician sergeants, first class.
Electrician sergeants, second class.
Master gunners.
Sergeants-major, junior grade.
Firemen.

BAND.

Organized as provided for regiments of cavalry.

Company:
1 captain.
1 first lieutenant.
1 second lieutenant.
1 first sergeant.
1 quartermaster sergeant.
2 cooks.
2 mechanics.
2 musicians,

and such number of sergeants, corporals, and privates as may be fixed by the President in accordance with the requirements of the service to which a company may be assigned.

One chaplain is authorized for each 12 companies.

The tactical units of the coast artillery, other than companies, are:

Artillery districts.

Battle commands.

Fire commands—mine commands.

Batteries.

In addition to its duties as outlined above, the personnel of the coast artillery corps, as far as practicable, will be instructed in the management of siege and heavy field artillery.

STAFF CORPS.

29. I. The General Staff Corps is composed of officers of the army detailed for service in that corps.

The Adjutant-General's Department, the Inspector-General's Department, the Judge-Advocate-General's Department, and the Pay Department consist of such officers as are authorized by law, respectively, for those departments.

The Quartermaster's Department, the Subsistence Department, the Medical Department, the Ordnance Department, the Corps of Engineers (sec. 27), and the Signal Corps consist of such officers and enlisted men as are authorized by law, respectively, for those departments and corps.

II. *Quartermaster's Department.*

30. With a division:
In addition to chief quartermaster—

4 majors or captains.
4 quartermaster-sergeants (post, mounted).
6 veterinarians (civilian, mounted).
6 clerks (civilian).

Transportation (not attached to organizations): Twelve wagon companies—5 for the ammunition train, 6 for the supply train, and 1 for distribution as follows:

11 wagons (2 spring) for brigade and division headquarters.
1 wagon (spring) for transportation of the chief quartermaster's clerks and records.
1 wagon for transportation of veterinary supplies, etc.
1 wagon (spring) for transportation of the chief commissary's clerks and records.
13 wagons for the postal service and contingencies.
1 pack train.

For *cavalry divisions* the organization is the same except the number of wagon companies is 7, the number of veterinarians 2, and the number of pack trains 2 or more.

For an auxiliary division the organization is determined when the division is created.

III. *Subsistence Department.*

31. With a division:
In addition to chief commissary—

3 majors or captains.
4 commissary sergeants (post, mounted).
4 clerks (civilian).
1 wagon for transportation of clerks and records (sec. 30).

One division field bakery train:

14 bakery (4-mule) and 1 field wagon.
Each bakery wagon is provided with a regimental bakery equipment and a personnel (civilian) of 1 teamster, 3 bakers, and 3 laborers.
Total personnel, 99; mules, 60.

For a cavalry division the organization is the same except that a cavalry division has no bakery train.

For an auxiliary division the organization is determined when the division is created.

IV. *Signal Corps.*

32. The Signal Corps consists of the chief signal officer and the commissioned and enlisted personnel authorized by law for that corps.

For duty in the field, signal troops are organized as follows:

For each division, including cavalry divisions, 1 field battalion.

For each field army, 1 aero-wireless battalion.

For an army, the necessary signal troops to maintain lines of information between army headquarters and the separate units.

For the line of communications, the necessary signal troops to maintain lines of information between the army and the home country and along the line of communications.

The field battalions maintain lines of information within the division and between the division and the headquarters of the field army of which the division forms a part. All signal troops are individually mounted or ride on vehicles.

Company (field):
- 1 captain.
- 3 1st lieutenants.
- 2 master signal electricians.
- 1 1st sergeant.
- 1 supply sergeant.
- 1 mess sergeant.
- 1 stable sergeant.
- 6 sergeants, first class.
- 14 sergeants.
- 18 corporals.
- 2 cooks.
- 1 farrier.
- 1 saddler.
- 3 mechanics (1 as horseshoer).
- 2 wagoners.
- 2 trumpeters.
- 45 privates, first class and privates (5 as drivers).
- 4 wire carts (4-horse).
- 1 inst. wagon (4-mule).
- 6 pack mules.
- 2 field wagons.

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4 officers (mounted).
100 enlisted men (72 mounted).

Battalion (field):
- 1 major.
- 1 adjutant (captain).
- 1 supply officer (captain).
- 1 sergeant major (mounted).
- 1 supply sergeant (mounted).
- 1 color sergeant (mounted).
- 1 wagoner.
- 3 privates (as orderlies, mounted).
- 1 field wagon.
- 2 field companies.

- 11 officers (mounted).
- 207 enlisted men (150 mounted).
- 8 wire carts.
- 2 inst. wagons.
- 12 pack mules.
- 5 field wagons (sec. 34).

Attached sanitary troops:
- 2 captains and lieutenants.
- 2 sergeants and corporals.
- 4 privates, first class and privates.

- 2 officers (mounted).
- 6 enlisted men (mounted).

The sergeant-majors, supply sergeants, 1st sergeants, color sergeants, mess sergeants, and stable sergeants called for in the above organizations are detailed to act in those positions from signal sergeants, first class, or sergeants, in such manner as the chief signal officer may provide. The farriers, saddlers, mechanics, wagoners, and trumpeters are similarly detailed from the corporals, privates, first class, and privates.

AERO-WIRELESS COMPANIES AND BATTALIONS.

As to personnel the organization of aero-companies and of wireless companies, and of aero-wireless battalions, is the same as that of field companies and battalions, respectively.

The transportation of wireless companies is the same as that of field companies. The transportation required for an aero-company has not yet been determined.

V. *Medical department.*

33. The Medical Department consists of a surgeon-general, and of the commissioned and enlisted personnel, nurses, and dental surgeons authorized by law for that department. The personnel of the department and all other persons assigned to duty with that department are collectively called *sanitary troops*.

For duty in the field, sanitary troops are divided into (1) those assigned to regiments and other units, and (2) those formed into independent sanitary units, such as ambulance companies and field hospitals.

The following table shows the distribution of the sanitary troops forming part of a complete division. In this distribution the troops assigned to the infantry are divided pro rata among the regiments of that arm. A like distribution is made of the sanitary troops assigned to the cavalry and artillery. The injured of commands having no sanitary troops seek the nearest medical service available.

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Sanitary personnel.

(*a*) DIVISION.

	Personnel.								
	Lieutenant-colonels.	Majors.	Captains and lieutenants.	Total commissioned.	Sergeants, first class.	Sergeants and corporals.	Privates, first class, and privates.	Total enlisted.	Grand total.
Division headquarters	1	1	1	3	1	.....	6	7	10
Inspection	1	.....	.....	1	.....	1	1	2	3
Infantry, 9 regiments	.....	9	27	36	9	27	180	216	252
Cavalry, 1 regiment	.....	1	3	4	1	3	20	24	28
Artillery, 2 regiments	.....	2	4	6	2	4	36	42	48
Engineers, 1 battalion	.....	.....	3	3	.....	3	6	9	12
Signal troops, 1 battalion	.....	.....	2	2	.....	2	4	6	8
Ammunition train	.....	.....	2	2	1	1	6	8	10
Supply train	.....	.....	1	1	.....	1	3	4	5
Ambulance companies (4)	.....	1	20	21	8	29	281	318	339
Field hospitals (4)	.....	5	16	21	12	25	193	230	251
Reserve supplies[a]	.....	.....	1	1	1	1	9	11	12
Total	2	19	80	101	35	97	745	877	978

[a] With supply train.

Sanitary personnel—Continued.

DIVISION—Continued.

	Mounts and transportation.								
	Mounts.			Transportation.					Total animals.
	Officers.	Enlisted men.	Total.	Ambulances.	Wagons.	Draft animals.	Pack animals.	Total draft and pack animals.	
Division headquarters	5	5	10						10
Inspection	2	2	4						4
Infantry, 9 regiments	45	72	117		9	36	9	45	162
Cavalry, 1 regiment	5	22	27		1	4	1	5	32
Artillery, 2 regiments	8	38	46		2	8	2	10	56
Engineers, 1 battalion	3	6	9						9
Signal troops, 1 battalion	2	4	6						6
Ammunition train	2	4	6						6
Supply train	1	2	3						3
Ambulance companies (4)	22	54	76	48	12	240	16	256	332
Field hospitals (4)	26	34	60		32	128		128	188
Reserve supplies [a]	1	3	4		6	24		24	28
Total	122	246	368	48	62	440	28	468	836

[a] With supply train.

NOTE.—One led horse for each officer above the grade of captain.

Sanitary personnel—Continued.

(*b*) CAVALRY DIVISION.

	Personnel.								
	Lieutenant-colonels.	Majors.	Captains and lieutenants.	Total commissioned.	Sergeants, first class.	Sergeants and corporals.	Privates, first class, and privates.	Total enlisted.	Grand total.
Division headquarters	1	1	1	3	1	.....	6	7	10
Inspection	1	.....	.....	1	.....	1	1	2	3
Cavalry, 9 regiments	.....	9	27	36	9	27	180	216	252
Horse artillery, 1 regiment	.....	1	2	3	1	2	18	21	24
Engineer battalion (mounted)	.....	.....	3	3	.....	3	6	9	12
Signal battalion	.....	.....	2	2	.....	2	4	6	8
Ammunition train	.....	.....	2	2	1	1	6	8	10
Supply train	.....	.....	1	1	.....	1	3	4	5
Ambulance companies (2)	.....	.....	10	10	4	14	140	158	168
Field hospitals (2)	.....	2	8	10	6	12	96	114	124
Reserve supplies[a]	.....	.....	1	1	1	1	9	11	12
Total	2	13	57	72	23	64	469	556	628

[a] With supply train.

Sanitary personnel—Continued.

CAVALRY DIVISION—Continued.

	Mounts and transportation.								
	Mounts.			Transportation.					Total animals.
	Officers.	Enlisted men.	Total.	Ambulances.	Wagons.	Draft animals.	Pack animals.	Total draft and pack animals.	
Division headquarters	5	7	12						12
Inspection	2	3	5						5
Cavalry, 9 regiments	45	216	261		9	36	9	45	306
Horse artillery, 1 regiment	4	20	24		1	4	1	5	29
Engineer battalion (mounted)	3	9	12						12
Signal battalion	2	8	10						10
Ammunition train	2	4	6						6
Supply train	1	2	3						3
Ambulance companies (2)	10	26	36	24	6	120	8	128	164
Field hospitals (2)	12	16	28		16	64		64	92
Reserve supplies [a]	1	3	4		6	24		24	28
Total	87	314	401	24	38	248	18	266	667

[a] With supply train.

NOTE.—One led horse for each officer above the grade of captain.

(*c*) Auxiliary division:

1 major, chief surgeon.
1 major, inspector.
1 sergeant, first class (mounted).
4 privates, first class and privates (mounted).
} Headquarters.
1 ambulance company.
1 field hospital.
The personnel attached to the organizations.

(*d*) Headquarters of a field army:

1 colonel, chief surgeon.
1 colonel, inspector.
2 majors.
2 sergeants, first class (mounted).
9 privates, first class and privates (5 mounted).
1 ambulance.
1 wagon.

(*e*) The sanitary personnel of the headquarters of an *army* is prescribed when the army is organized.

(*f*) Line of communications.—For each division at the front:

1 transport column.
1 sanitary supply depot.
2 evacuation hospitals.
1 base hospital.
1 base depot.

Such other sanitary formations as may be necessary. The organization of these establishments is given in the Medical Manual.

34. TRANSPORTATION.

(*a*) A wagon company:

1 wagon master.
2 assistant wagon masters.
1 horseshoer.
1 blacksmith.
1 saddler.
1 cook.
1 watchman.
28 teamsters.
112 draft mules.
5 riding mules.
27 wagons.

36 total personnel.

Ordinarily 26 wagons of each wagon company carry supplies for the command, including three days' grain for the wagon company teams. The remaining wagon is the *field wagon* of the company and carries rations, forage, cooking utensils, tools, etc., for the company, and grain for the team and for the riding and spare mules.

(*b*) A pack train:

1 pack master.
1 cargador.
1 horseshoer.
1 cook.
10 packers.
14 riding mules.
50 pack mules.
1 bell horse.

14 total personnel.

(*c*) *Combat and field trains.—Division.*

Organization.	Combat trains.			Field trains, wagons.
	Led horses.	Wagons, etc.	Pack mules.	
Infantry:				
Company				1
Battalion	1	2 ammunition		5
Machine guns				1
Band and noncommissioned staff.				1
Regimental headquarters	2			1
Regimental sanitary troops	1		1	1
Regiment complete	6	6 ammunition	1	[a] 19
Cavalry:				
Troop				2
Squadron	1	1 ammunition		9
Machine guns				2
Band and noncommissioned staff.				1
Regimental headquarters	2			1
Regimental sanitary troops	1		1	1
Regiment complete	6	3 ammunition	1	[a] 32

[a] And 4 extra team mules.

(c) *Combat and field trains.—Division*—Continued.

Organization.	Combat trains.			Field trains, wagons.
	Led horses.	Wagons, etc.	Pack mules.	
Artillery, light:				
Battery		Btry. reserve		4
Battalion	1	1 reel cart[a]		13
Band and noncommissioned staff.				1
Regimental headquarters	2	1 reel cart		1
Regimental sanitary troops	1		1	1
Regiment complete	5	1 reel cart[b]	1	[c]29
Engineers, pioneers:				
Company		3 tool wagons	6	2
Battalion headquarters	1	1 map wagon		1
Battalion complete	1	10	18	7
Signal troops:				
Company		4 wire carts; 1 instrument wagon.	6	2
Battalion headquarters	1			1
Battalion complete	1	10	12	5
Brigade headquarters	2			1
Division headquarters	11			7

[a] Plus battery reserves.
[b] Plus battalion combat trains.
[c] And 4 extra team mules.

A battery reserve consists of 6 caissons, 1 store wagon, 1 forge, 1 pair each of harnessed wheel and lead horses, and the accompanying personnel.

The trains of horse artillery are the same as those of light artillery, except that each battery has 5 field wagons. For mountain artillery pack mules take the place of the ammunition and field wagons.

NOTE.—As a rule, only officers above the grade of captain have led horses.

When the company field trains of a battalion are united, they form, with the headquarters wagon, the battalion field train; similarly the united battalion field trains of a regiment, plus wagons at regimental headquarters form the regimental field train, etc.

(*d*) *Ammunition train.*—A division ammunition train (complete) consists of 5 wagon companies, 3 for small arms and 2 for artillery ammunition.

A cavalry division ammunition train (complete) consists of 3 wagon companies, 2 for small arms and 1 for artillery ammunition.

An auxiliary division ammunition train consists of 1 wagon company for each battalion of heavy artillery.

(*e*) *Supply train.*—The division supply train (complete) consists of 6 wagon companies.

When not detached therefrom, the wagons carrying reserve sanitary stores (6), the pack train and the division field bakery train are attached to the supply train.

The supply train of a cavalry division (complete) consists of 3 wagon companies supplemented by pack-train service. This contemplates obtaining supplies, especially forage, in the theater of operations.

COMMANDER OF TRAINS.

To secure the prompt execution of orders, prevent confusion in the marching and camping of trains, expedite supply, and regulate matters of police and the duties of train guards, commanders of divisions, or of smaller independent units, may assign an officer with the necessary assistants to command all trains, and other units, in rear of the main body. Such an officer is known as the "commander of trains." In general terms he exercises supervision over military affairs pertaining to the division or independent unit from the rear of the combatant troops to the advance supply depot of the line of communications.

Division, complete.

Organization.	Personnel.						
	Officers.		Veterinarians.	Enlisted men.		Civilians.	Aggregate.
	Combatant.	Sanitary and chaplains.		Combatant.	Sanitary.		
The line (including attached sanitary troops).							
Division headquarters[a]	8	4	.....	.....	9	13	34
Infantry (3 brigades, 9 regiments)	453	45	.....	13,500	216	6	14,220
Cavalry (1 regiment)	50	5	2	1,188	24	.....	1,269
Artillery (1 brigade, 2 regiments)	83	8	4	2,252	42	2	2,391
Engineers (1 battalion, 3 companies)	15	3	.....	501	9	.....	528
The staff.							
Quartermaster's department (not counted elsewhere)	[b]4	.....	6	4	.....	30	44
Subsistence department (including bakery)	[b]3	.....	.....	4	.....	104	111
Signal troops (1 battalion, 2 companies, including attached sanitary troops)	11	2	.....	207	6	.....	226
Sanitary troops (4 ambulance companies, 4 field hospitals, reserve)	.....	43	.....	.....	559	.....	602
Ammunition train (5 wagon companies)	.....	2	.....	.....	8	180	190
Supply train (6 wagon companies)	.....	1	.....	.....	4	216	221
Pack train	.....	.....	.....	.....	.....	14	14
Total	627	113	12	17,656	877	565	19,850

[a] Including sanitary inspector and his orderlies. In this table it is assumed that the brigade adjutants and the personal aids of general officers are detailed from the division; they are therefore not counted at their respective headquarters.

[b] Assuming 2 as majors.

Division, complete—Continued.

Organization.	Animals.					Vehicles.				
	Horses.		Mules.			Guns.	Caissons.	Wagons and carts (combat).	Ambulances.	Wagons (service of supply).
	Mounts.[a]	Draft.	Riding.	Draft.	Pack.					
The line (including attached sanitary troops).										
Division headquarters	30	.....	.....	28	.....	.....	.....	.....	.....	7
Infantry (3 brigades, 9 regiments)	663	.....	.....	948	279	.....	.....	54	.....	174
Cavalry (1 regiment)	1,225	.....	.....	144	31	.....	.....	3	.....	32
Artillery (1 brigade, 2 regiments)	800	1,368	.....	244	2	48	144	30	.....	59
Engineers (1 battalion, 3 companies)	102	.....	6	68	18	.....	.....	10	.....	7
The staff.										
Quartermaster's department (not counted elsewhere)	16	.....	5	64	.....	.....	.....	.....	.....	15
Subsistence department (including bakery)	9	.....	.....	64	.....	.....	.....	.....	.....	16
Signal troops (1 battalion, 2 companies, including attached sanitary troops)	170	32	.....	28	12	.....	.....	10	.....	5
Sanitary troops (4 ambulance companies, 4 field hospitals, reserve)	140	.....	.....	392	16	.....	.....	.....	48	50
Ammunition train (5 wagon companies)	6	.....	25	560	.....	.....	.....	.....	.....	135
Supply train (6 wagon companies)	3	.....	30	672	.....	.....	.....	.....	.....	162
Pack train	1	.....	14	.....	50	.....	.....	.....	.....	.....
Total	3,165	1,400	80	3,212	408	48	144	107	48	662

[a] Including 1 led horse for each officer above the rank of captain.

Cavalry division, complete.

Organization.	Personnel.						
	Officers.		Veterinarians.	Enlisted men.		Civilians.	Aggregate.
	Combatant.	Sanitary and chaplains.		Combatant.	Sanitary.		
The line (including attached sanitary troops).							
Division headquarters[a]	8	4	.....	.....	9	13	34
Cavalry (3 brigades, 9 regiments)	453	45	18	10,692	216	6	11,430
Artillery (1 regiment, horse)	41	4	2	1,126	21	.....	1,194
Engineers (1 battalion, mounted)	15	3	.....	309	9	.....	336
The staff.							
Quartermaster's department (not counted elsewhere)	[b] 4	.....	2	4	.....	31	41
Subsistence department	[b] 3	.....	.....	4	.....	5	12
Signal troops (1 battalion, 2 companies, including attached sanitary troops)	11	2	.....	207	6	.....	226
Sanitary troops (2 ambulance companies, 2 field hospitals, reserve)	.....	21	.....	.....	283	.....	304
Ammunition train (3 wagon companies)	.....	2	.....	.....	8	108	118
Supply train (3 wagon companies)	.....	1	.....	.....	4	108	113
Pack trains (2)	.....	.....	.....	.....	.....	28	28
Total	535	82	22	12,342	556	299	13,836

[a] Including sanitary inspector and his orderlies. In this table it is assumed that the brigade adjutants and the personal aids of general officers are detailed from the division; they are therefore not counted at their respective headquarters.

[b] Assuming 2 as majors.

Cavalry division, complete—Continued.

Organization.	Animals.					Vehicles.				
	Horses.		Mules.			Guns.	Caissons.	Wagons and carts (combat).	Ambulances.	Wagons (service of supply).
	Mounts.[a]	Draft.	Riding.	Draft.	Pack.					
The line (including attached sanitary troops).										
Division headquarters	33			28						7
Cavalry (3 brigades, 9 regiments)	11,431			1,308	279			27		291
Artillery (1 regiment, horse)	813	684		144	1	24	72	15		35
Engineers (1 battalion, mounted)	314		6	68	18			10		7
The staff.										
Quartermaster's department (not counted elsewhere)	12		5	68						16
Subsistence department	9			4						1
Signal troops (1 battalion, 2 companies, including attached sanitary troops)	170	32		28	12			10		5
Sanitary troops (2 ambulance companies, 2 field hospitals, reserve)	68			208	8				24	28
Ammunition train (3 wagon companies)	6		15	336						81
Supply train (3 wagon companies)	3		15	336						81
Pack trains (2)	2		28		100					
Total	12,861	716	69	2,528	418	24	72	62	24	552

[a] Including 1 led horse for each officer above the rank of captain.

ARTICLE II.

THE SERVICE OF INFORMATION.

GENERAL PRINCIPLES.

36. Military Information.—Military information may be considered under two general heads, namely (1) that collected by the General Staff in time of peace; (2) that obtained by troops in the field after the outbreak of hostilities. The *former* relates to the geography, resources, and military strength of the various nations, and enables the War Department to decide upon the size of an army or expedition, the proportion of the different arms, character of clothing, equipment, etc., that may be necessary in the event of war. The *latter* relates to the theater of operations and to the position, strength, intentions, etc., of the enemy in the field, and is absolutely essential to enable a commander properly to estimate the situation.

37. *Information in the field* is obtained from various sources—higher commanders, adjoining troops, inhabitants, newspapers, letters, telegraph files, prisoners, deserters, spies, maps, and reconnaissances. Knowledge of the terrain, always essential to a correct understanding of the situation, is obtained from a careful study of available maps, supplemented by thorough reconnaissance.

38. Information Division.—At the outset of a campaign the commander of an army, or of a separate command in the field, organizes an *information division*, where all information of the enemy and of the theater of operations is sent without delay. This division classifies the information brought in and prepares the necessary field maps.

When the enemy adopts guerilla warfare, the search for information acquires special importance. In this case an efficient secret service is organized as soon as practicable.

The employment of spies, and the examination of prisoners, deserters, and inhabitants, must not be neglected.

In hostile territory influential persons, especially those supposed to be active in the enemy's cause, may be seized and their persons

and houses searched. Letters and newspapers in postoffices and files in telegraph offices are carefully examined and anything of importance sent to higher authority. Matter not of importance is replaced if time permits; if not, the whole is sent to headquarters. Local maps of recent date may be of great value.

When reliable information of the enemy can not be obtained, it is assumed that he will act with good judgment.

39. Information received by any person in the military service, and the action taken thereon, must be promptly reported to the proper military superior.

40. Unless instructions have been given to spread false information, all persons connected with the military service are forbidden to discuss the military situation, plans, movements, etc., with, or in the presence of, civilians of any age, sex, or nationality.

41. Military information is given to newspaper correspondents, etc., only by officers designated by the supreme commander.

RECONNAISSANCE.

42. *Reconnaissance* is the military term used to designate the work of troops or individuals when gathering information in the field. It is primarily, *especially when at a distance*, a function of the independent cavalry, or of troops and individuals (divisional cavalry or infantry) specially detailed; but troops on the service of security (advance guards, etc.) conduct a *limited reconnaissance* sufficient to insure the safety of the command.

By independent cavalry.

43. Reconnaissance to *find the enemy* is usually made by cavalry, varying in strength according to the situation, but in large commands appearing, generally, as *independent* brigades or divisions. On such duty cavalry not only gathers information, but also screens the main command by keeping the enemy at a distance.

44. Independent cavalry is that cavalry which, operating under the direction of the commander of an army or separate command, is detached on some special mission. Its commander, within the scope of his instructions, acts on his own initiative, and is responsible to the supreme commander only. Independent cavalry on reconnoitering duty pushes boldly out in advance, usually one or two marches. *Its first duty is to find the enemy's main body*, and then to *preserve contact*.

To find the enemy's main body, it is generally necessary first to *defeat his cavalry*, and for this purpose the commander keeps the bulk of his forces well in hand—maintains a *central mass*—ready to strike the enemy's cavalry whenever the latter is encountered. From this central mass small detachments are sent out; these detachments, by means of scouts and small groups of men called patrols, gather information.

When for any reason, such as the nature of the country, activity of the enemy, etc., it is inadvisable to send out small detachments, larger ones are detailed to operate along parallel roads or in specially designated sections of the country. These detachments cover themselves with scouts or patrols and keep constantly in touch with the *central mass*.

The march of the central mass depends upon the information brought in; it moves uninterruptedly, or from position to position, according to circumstances.

As a rule only general instructions are given to a commander of independent cavalry. It is usually sufficient to indicate the country to be reconnoitered, invite attention to specially important localities, and point out the extent of the daily advance. He is generally in telegraphic communication with the supreme commander, and keeps him constantly informed of the situation at the front. In the absence of telegraphic facilities, he reports according to the circumstances, sending his messages by the divisional cavalry when practicable.

Commanders of independent cavalry must solve the difficult problems confronting them without expecting aid from other troops. The horse artillery in column is usually near the head of the cavalry main body.

The extent of front covered by a body of independent cavalry should be such that its chief can exercise daily control over all parts of his command. For a brigade of three regiments the limit is assumed as about ten miles.

On very wide fronts an army is generally covered by two or more bodies of independent cavalry; each is informed of the extent of ground it is to cover and keeps in touch with the neighboring cavalry.

While reconnaissance as described herein is one of the principal functions of independent cavalry, such cavalry may be charged with a mission where the duty of screening troops in rear becomes of primary importance, such, for instance, as covering and concealing a turning movement.

By divisional cavalry.

45. Cavalry forming part of a division, or attached to smaller infantry units, is called *divisional cavalry*. It usually enters into the composition of advance, flank, rear, and outpost guards, and when so employed is known as advance guard, flank guard, rear guard, and outpost cavalry, as the case may be, and performs such reconnaissance as the situation demands.

When there is independent cavalry in front, the divisional cavalry maintains connection therewith; when not, it reconnoiters far to the front and gains touch with the enemy if possible, operating in a manner similar to that of independent cavalry.

Though its reconnaissance is more restricted than that of the independent cavalry, divisional cavalry goes more into detail and gathers information as to the resources of the country, roads, camping places, etc. As combat becomes imminent and the independent cavalry is drawn off to a flank, the divisional cavalry must be especially active to guard against surprise, gain information of the enemy's movements, and prevent incursions of his patrols.

By infantry.

46. In the absence of cavalry, reconnaissance at a distance is made by infantry or scouts specially detailed for that purpose.

If a command is weak in cavalry, or the country is rough and broken, it may be advisable to use reconnoitering detachments composed of both infantry and cavalry.

On the service of security, infantry makes such reconnaissance as the situation demands.

Patrolling.[a]

47. Reconnoitering Patrols.—*The chief duty of reconnoitering patrols is to gather information.* They habitually seek safety in concealment or flight, fighting only when their mission demands it. The most skillful patrolling is where patrols accomplish their mission and return without being discovered by the enemy.

[a] The term patrols is used to designate small detachments employed for a variety of purposes, the name of the detachment indicating its duty, as: visiting, connecting, combat, exploring, reconnoitering, flanking, harassing, pursuing patrols, etc.

48. The commander determines the *number* and *strength* of patrols and *when* they are to be sent out. It is a cardinal principle to send out only such patrols as insure effective reconnaissance. They are habitually small. Small patrols have great mobility, are easily concealed, and do not draw heavily on the fighting strength. In hostile territory, or when resistance is expected, stronger detachments are required. These cover themselves with small patrols of two to four men, the remainder acting as support.

The officer sending out a patrol verifies the detail, designates a second in command and *gives the necessary instructions.* Horses of conspicuous color and those that neigh when alone should not be sent. Precautions are taken to avoid the glitter and rattle of weapons and equipments.

49. *The orders or instructions for a patrol,* or for any detachment going on reconnaissance, must state clearly where the enemy is or is supposed to be, what information is desired, what features are of special importance, the general direction to be followed, whether friendly patrols are liable to be encountered, and where messages are to be sent or the patrol is to report. Important and comprehensive instructions should be in writing, but precautions against capture of papers must be taken. An officer sending out a patrol must be certain that his orders are understood. Detailed instructions are, as a rule, avoided. When necessary the time of return is stated.

50. Patrol Leaders.—Skillful patrolling is the basis of efficient reconnaissance. *Patrol leaders* are selected with care, officers being detailed for important missions. Patrol leaders should combine the qualities of good health, vigorous physique, keen eyesight, presence of mind and courage, with good judgment, military training, and experience. They should be able to read maps, make sketches, and send clear and concise messages. Officers on such duty often find themselves in positions where the situation must be viewed from the standpoint of a higher commander, and should be able to reason accordingly.

In special cases officers of the General Staff, or of other branches of the service, may be sent out with patrols.

To study the country with a view of obtaining information for their own arm, artillery officers or scouts may accompany patrols.

The *men* also are carefully selected. The knack of quickly finding one's way in a strange country, a knowledge of woodcraft, presence of mind and shrewdness, are desirable qualities.

The leader of a patrol should have a map, watch, field glass, compass, message blanks, and pencils. When practicable, important patrols are provided with cavalry buzzers. A camera may also be useful, as it enables a patrol leader to send back photographs of important landmarks.

The leader of a patrol thoroughly *inspects* it before starting, and satisfies himself that every man and horse is in fit condition. He then secures a guide (if necessary), locates himself on the map, gives the countersign, if any, to the men, and explains to them in detail his plans and the instructions from higher authority.

51. Conduct.—As to their conduct, patrols exercise the greatest vigilance to prevent discovery. They travel with as little impedimenta as possible.

No normal *formation* for a patrol is, or should be prescribed. Under the leader's guidance it moves so as to guard against surprise, usually with point and flankers. To extend the sphere of its observation, still smaller patrols (one or two men) may be sent out for short distances, communication with the leader being maintained by signals. *Whatever the formation adopted, it should favor the escape of at least one man in case of surprise.*

In patrols of two to five men the commander generally leads. In this formation few signals are necessary, the men simply regulating their movements by his.

Villages and inclosures involving danger of surprise are entered with precaution, and for brief periods only. Halts are made at points affording good view, and the country is studied in all directions, landmarks to the rear being impressed on the minds of the men so that the way back can be readily found; the leader consults his map and locates himself thereon.

When a patrol is scattered, it reassembles at some place previously selected; if checked in one direction it takes another; if cut off, it returns by a detour or forces its way through. As a last resort it scatters, so that at least one man may return with information.

Occasionally it is advisable for the leader to conceal his patrol and continue the reconnaissance with one or two companions; in the case of cavalry the leader and men thus detached should be well mounted.

Patrols far from their commands, or in contact with the enemy, often remain out overnight. In such cases they seek a place of concealment, proceeding thereto after nightfall or under cover.

Opportunities for watering, feeding, and rest must not be neglected. When necessary the leader provides for subsistence by requisition or purchase.

In questioning civilians caution is observed not to disclose information that may be of value to the enemy. Strangers are not allowed to precede the patrol. Patrol leaders are authorized to seize telegrams and mail matter, and to arrest individuals, reporting the facts as soon as possible.

Returning patrols near their own lines march at a walk, unless pressed by the enemy.

52. Indications of the Enemy.—Nothing should escape the observation of the patrol. The slightest indication of the enemy should be reported to the leader at once. On roads and in abandoned camps, signs are often found which indicate the number, character, and condition of the enemy, and the direction in which he is marching. Abandoned clothing or equipage may bear marks indicating organizations.

The number of camp fires and the area over which they are spread afford an estimate of the strength and position of the enemy. An increase in the number or area of fires indicates new arrivals. Much smoke at unusual hours indicates movement. Such signs, however, are accepted with caution.

Tracks in the road indicate the number and kind of troops and the direction of march. Broad trails parallel to the roads or across country indicate a concentrated march.

A thick and low cloud of dust indicates infantry; a high and thin cloud, cavalry; a broken cloud, artillery or wagon trains. The size of the command and direction of march may be roughly estimated by the dust, but the effect of wind must be considered.

The strength of a body of troops may be estimated from the length of time it takes to pass a given point. Assuming that infantry in column of fours occupies half a yard per man, cavalry 1 yard per trooper, and artillery in single column 20 yards per gun or caisson, a given point would be passed in one minute by about—

175 infantry.
110 cavalry, at walk.
200 cavalry, at trot.
5 guns or caissons.

For troops in column of twos, take one-half of the above estimates.

53. *When it is certain that the enemy has been discovered, that fact is promptly reported.*

The exact location of the enemy—whether deployed, marching, or in camp—his strength, and the arms of service are next ascertained and reported. It is often difficult to decide whether the troops discovered are the main body or merely the advance guard or outposts. The rule is to observe the *main body*; therefore it may be necessary to obtain a view from a position in rear of the covering troops. This is done by going around or by breaking through, returning over different ground to avoid ambuscade.

54. Signals.—In addition to the usual *signals* prescribed in drill regulations, the following should be clearly understood by members of a patrol:

Enemy in sight in small numbers, hold the rifle above the head horizontally; enemy in force, same as preceding, raising and lowering the rifle several times; take cover, a downward motion of the hand.

Other signals may be agreed upon before starting, but they must be familiar to the men; complicated signals are avoided. Signals must be used cautiously, so as not to convey information to the enemy.

Reconnaissance in force.

55. When it is impossible to locate the enemy's lines and determine his strength in any other way, recourse may be had to reconnaissance in force as a prelude to a general attack. It is made only by order of the supreme commander.

The operation is conducted in the same general manner as a regular attack. Various portions of the line are threatened or actually attacked, and an effort is made to capture prisoners. Staff officers endeavor to locate the enemy's trenches, ascertain his strength, etc.

Reconnaissance by balloon or flying machine.

56. Balloons are classed as *free*, *dirigible*, and *captive*. Free balloons convey information from besieged places, return messages being sent by wireless, carrier pigeons, or otherwise. Their uncertainty of movement renders such balloons of little use in reconnaissance.

The dirigible balloon or flying machine is used as the commander directs.

Captive balloons used in reconnaissance should be small and seldom more advanced than the reserve of the advance guard or outpost. They should not disclose the position of troops and thereby subject them to the enemy's artillery fire. To a command in position, captive balloons near the flanks are of great value, as they furnish a means for quickly discovering flanking attempts of the enemy.

Communication with a captive balloon is generally by wire. Signals might be observed by the enemy. The observer should be a well-informed officer.

MESSAGES, REPORTS, FIELD MAPS, AND WAR DIARIES.

57. A *message* is a communication sent from one person to another. In the field the term is generally applied to written information sent by messenger or wire. Such messages are brief and *clear*, resembling telegrams. The source of the information contained in messages is always given, the writer carefully separating what he has actually seen himself from that received second hand. Most of the rules adopted to secure clearness in orders apply equally to messages.[a]

58. A *report* is a more or less formal account of some enterprise, undertaking, or event, such as a march, reconnaissance, battle, etc. This term is sometimes incorrectly used for "message." A report is usually drawn up at comparative leisure, is often the supplement and expansion of short messages, and thus possesses the value of greater detail.

59. In the field the *maps* available for general use are on a small scale. Those of our own country are prepared by the Geological Survey on a scale of 1:62500 (approximately 1 inch to the mile), with 20-foot contours. These maps are supplemented by *field maps* or *sketches* prepared from day to day. For facility in reading, military maps are made according to a uniform system of scales and contour intervals, as follows: One inch to 1 mile, V. I. 60 feet; 3 inches to 1 mile, V. I. 20 feet; 6 inches to 1 mile, V. I. 10 feet; 12 inches to 1 mile, V. I. 5 feet.

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[a] For form of message blank see Appendix B.

As a rule, road sketches are made on a scale of 3 inches to 1 mile, V. I. 20 feet; position and outpost sketches, 6 inches to 1 mile, V. I. 10 feet. The 1-inch map is used for extended operations; the 12-inch map for the *war game* or for the discussion of operations at *maneuvers*, and in siege operations.

As sketches must be made rapidly, often on horseback, unnecessary conventional signs are omitted.[a] Sketches are useful to supplement messages, and to elucidate reports of campaigns and battles.

60. A *war diary* is a record of events kept at every military headquarters in the field. Entries are made daily and should form a concise history of the military operations.

The diary contains a record of everything affecting the command, such as marches, weather, roads, shelter, supply, movements of trains, security, combats of every kind, lists of losses in *personnel* and *matériel*, health of troops, etc. Copies of the commander's orders and reports, and of the reports of his subordinates are incorporated or added as appendices.

It is of special importance that the exact hour and place at which movements are begun and ended, orders or important messages sent or received, be noted. The entry after an action should include a sketch showing the positions of the command at the most important phases.

A diary is kept by each battalion and higher organization, by each company unit, by each field train of a regiment or detached battalion, by each ammunition train, supply train, ambulance company, and field hospital.

TRANSMISSION OF INFORMATION.

61. Information is transmitted as follows:

1. By wire (telegraph, buzzer, telephone).
2. By visual signaling (flag, helio, night lamp).
3. By wireless telegraph.
4. By messenger (foot, mounted, cycle, motor car, flying machine).

62. Information over considerable distances is usually transmitted by wire or wireless telegraph. For short distances,[b] and

[a] For conventional signs see Appendix C.

[b] For instance, at *urgent* speed and for distances up to about half a mile, mounted messenger can deliver a message of 10 words in less time than the same can be delivered by wire.

when other means are not available, information is carried by messenger. When messages are sent by wire or wireless telegraph they are always handed the operator in writing. The telephone is not so accurate as the telegraph, and when used the parties concerned do the talking, if practicable. All available means are utilized to facilitate the transmission of information, and it is the duty of all officers to assist in the transmission of orders and messages.

63. It is frequently advisable to send information not only to the proper superior, but to neighboring troops as well. When copies of messages are so sent the fact is noted upon each. In large commands information as to the situation of neighboring troops is often of great importance. In such cases "information officers" are sent to accompany such troops. These officers send to their own commanders all information of military importance to them.

64. Messages carried by messenger are usually inclosed in envelopes properly addressed. The envelope when not marked "confidential" is left unsealed so that commanders along the line of march may read the contents. Upon the envelope is written the name of the messenger, his time of departure, and rate of speed. The latter is indicated as follows: *Ordinary, rapid,* or *urgent.* Ordinary means about 5 miles an hour for a mounted man; rapid, about 7 or 8 miles an hour; and urgent, the highest speed consistent with certainty of arrival at destination. The recipient notes the time of receipt upon the envelope and returns the latter to bearer.

65. When there is danger of falling into the hands of the enemy, messages are sent in cipher.

66. The difficulty of transmitting information by messenger increases with the distance. At night, and when the roads are bad, the service is slower; when the inhabitants are hostile or the enemy's detachments active, it is less reliable.

Important information is sent by two or more messengers, depending upon the dangers of the road. A single messenger is not so confident, and something may happen to him or to his horse. It may also be advisable to send duplicate messages by different routes. Messengers are informed before starting of the purport of the message, and where they are to report after it is delivered. A messenger need not alter his pace when passing superiors.

67. When the usual means of communication can not be established, or fail to work, relay lines of mounted men may become necessary. When such lines are established connecting posts are generally placed on the roads at well-marked points, such as crossroads, bridges, etc. The distance between posts depends upon the rapidity of transmission desired, the number of men available, and the location of suitable stations. The usual distance is from 5 to 10 miles. The strength of such posts varies from six men and a noncommissioned officer to half a troop. A record is kept at each post of all communications received and transmitted.

ARTICLE III.

ORDERS.

GENERAL PRINCIPLES.

68. A military order is the expression of the will of a chief conveyed to subordinates. However informally expressed, military orders must be loyally and promptly obeyed.

The art of giving proper instructions and orders to troops is one of the most important features in the exercise of command.

69. Orders are classified as *routine orders* and *field orders*.

Routine orders are those used in the ordinary administration of military affairs, and are called *general orders*, *special orders*, *circulars*, and *orders*, according to circumstances.

Field orders are those dealing with *tactical* and *strategical operations* incident to a state of war.

The originals of field orders are carefully preserved.

70. At the beginning of operations, and from time to time thereafter, the plans of the supreme authority are communicated in the form of *letters of instruction*. These regulate movements over large areas and for considerable periods of time.

When it becomes necessary to prescribe *tactical* or *strategical* operations, field orders are issued. For example: orders for a march or for the formation of a camp or bivouac; orders for advance guards, rear guards, outposts, etc.

71. Field orders do not, ordinarily, include administrative details. Such matters are usually better covered by verbal instructions or routine orders. Circumstances may arise, however, where it would be advantageous to include in field orders instructions relating to rations, ammunition, forage, etc.

72. Field orders are issued *verbally, by dictation*, or *in writing*. When commands are scattered or are as large as a division, *written orders* are the rule; they are addressed to the subordinates charged with their execution. Commanders of the smaller units usually issue verbal or dictated orders, the subordinate commanders or their adjutants being assembled at stated hours or pursuant to

special call. When not communicated by the commander in person, verbal orders are carried by staff officers or messengers. Important verbal orders are recorded as soon as practicable after issue.

73. As there is always a possibility of controversy as to their wording, verbal orders are sent by messengers in cases of necessity only, and when so sent rarely contain more than one definite mandate. For example: "The regiment will halt three hours at ——." More latitude is allowed in sending verbal orders by officers.

The bearer of a verbal order or message is required to repeat it before starting.

74. To give subordinate commanders an opportunity to study the situation, field orders should reach them in ample time. As a rule, however, it is desirable to keep contemplated movements secret as long as possible, and to confine knowledge thereof to chiefs of staff departments and commanders of the larger units.

In large commands it requires some time for formal orders to reach all the lower units; this may be roughly estimated at one hour for a brigade and one hour and a half for a division.

The hour stated in the heading of an order is the hour of *signature*.

COMPOSITION OF FIELD ORDERS.

75. To frame a suitable field order the commander must make an *estimate of the situation*, culminating in a *decision* upon a definite plan of action. He must then actually *draft* or *word* the orders which will carry his decision into effect.

An *estimate of the situation* involves a careful consideration, from the commander's view point, of all the circumstances affecting the particular problem. In making this estimate he considers his *mission* as set forth in the orders or instructions under which he is acting, or as deduced by him from his knowledge of the situation, all available information of the *enemy* (strength, position, movements, probable intentions, etc.), conditions affecting his *own command* (strength, position, supporting troops, etc.), and the *terrain* in so far as it affects the particular military situation. He then compares the various plans of action open to him and decides upon the one that will best enable him to accomplish his mission.

Clear and decisive orders are the logical result of definite and sure decisions and are the means of transforming the decision into action.

In framing field orders the integrity of tactical units is preserved whenever practicable.

76. Field orders must be *clear* and *definite*. Expressions depending upon the view point of the observer, such as *right, left, in front of, behind, on this side, beyond*, etc., are avoided, reference being made to points of the compass instead. The terms *right* and *left*, however, may be applied to individuals or bodies of men, or to the banks of a stream; in the latter case the observer is supposed to be facing down stream. The terms *right flank* and *left flank* are fixed designations. They apply primarily to the right and left of a command when facing the enemy and do not change when the command is retreating. The *head* of a column is its leading element, no matter in what direction the column is facing; the other extremity is the *tail*.

To minimize the possibility of error, geographical names are written or printed in ROMAN CAPITALS; when the spelling does not conform to the pronunciation, the latter is shown phonetically in parentheses, thus: BICESTER (Bister), GILA (Hee′-la).

When two or more places or features on the map have the same name they are distinguished by reference to other points.

A road is designated by connecting two or more names or places on the road with dashes, thus: LEAVENWORTH—LOWEMONT—ATCHISON road.

As a rule, an affirmative form of expression is used. Such an order as: "The field train will not accompany the command," is defective, because the gist of the order depends upon the single word "not."

Written orders should be so distinct as to be legible even in bad light.

77. Field orders are *brief;* short sentences are easily understood; conjectures, expectations, reasons for measures adopted, and detailed instructions for a variety of *possible* events, do not inspire confidence, and should be avoided.

78. The commander should accept the *entire responsibility*. In framing field orders such expressions as "attempt to capture," "try to hold," "as far as possible," "as well as you can," etc., are forbidden. They tend to divide responsibility between the commander and his subordinates.

79. *An order should not trespass upon the province of a subordinate.* It should contain everything beyond the independent authority of the subordinate, but nothing more.

80. When the transmission of orders involves a considerable period of time, during which the situation may change, detailed

instructions are avoided. The same rule holds when orders may have to be carried out under unforeseen circumstances. In such cases *letters of guidance* are preferable; they lay stress upon the *object to be attained*, and leave open the means to be employed. Orders attempting to arrange matters too far in advance may have to be recalled and others substituted; such changes impose needless hardships upon a command and injure its morale.

81. Details of time and place are carefully stated. Subordinate commanders and staff officers regulate their watches by the time kept at headquarters.

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

83. Arrangements for a possible retreat are communicated confidentially to a few senior commanders only.

FORM OF FIELD ORDERS.

84. To enable the will of the commander to be *quickly understood*, and to secure *prompt cooperation* among his subordinates, field orders are required to follow a general form. This form divides an order into sections or parts and assigns to each a particular class of information.

The parts of a field order are:

The heading.
The distribution of troops (in certain orders).
The body.
The ending.

The heading.

85. The heading contains the *title* or *name* of the issuing officer's command, the place, date and hour of issue, and the number of the order.

The distribution of troops.

86. The distribution of troops shows the tactical components into which a command is divided (advance guard, main body, etc.) and the troops assigned to each. It is generally used in march orders and in the first field order applying to a command newly created or organized. In other cases it is usually more convenient to name the troops in the body of the order, where their duties are prescribed.

When a "distribution" is used it is headed "Troops," and in written or printed orders is placed on the left of the *body*, occupying about one-third of the page. The tactical components are marked with lettered subheads (*a*), (*b*), etc., the troops listed under each performing the task prescribed in the similarly marked paragraph of the body of the order.

When orders are dictated or sent by wire or signals, the distribution of troops (if used) is given immediately after *paragraph 2*, without number.

The body.

87. The body contains information and instructions for the command, and is arranged in numbered paragraphs as follows:

Paragraph 1 contains such information of the enemy and of our supporting troops as it is desirable that subordinates should know.

Paragraph 2 contains the general plan of the commander, or so much thereof as will insure coöperation of all parts of the command.

Paragraph 3 contains the detailed *tactical* dispositions adopted by the commander to carry out the plan outlined in paragraph 2, including the tasks assigned to each of the several *combatant* fractions of the command. These tasks are given under lettered subheads (*a*), (*b*), etc., the leading fraction, or the one having the most important duty to perform, being generally considered first. For instance: In an attack order it is customary to consider the artillery first; in a march order, troops are considered according to their position in the column.

Instructions applicable to all of these fractions may be embodied in a subparagraph, lettered (*x*), at the end of *paragraph 3*.

Paragraph 4 contains instructions for the sanitary troops and the trains.

Paragraph 5 shows where the commander can be found or messages may be sent. In orders of subordinate commanders, this paragraph also gives the location of "lines of information," if any have been established.

If additional paragraphs are necessary, they are incorporated, properly numbered, after *paragraph 4*. Sometimes it is unnecessary to include instructions for the sanitary troops and the trains; but whatever the number of paragraphs the last always shows where the commander can be found, etc.

In active operations, especially during engagements, numerous orders are issued—either verbally or in the form of notes, brief

dispatches, messages, orders for assembly, etc.—which do not contain all the requirements of a formal written or printed field order; but whenever detailed instructions for *operations* are given, whether verbally, in writing, or otherwise, the sequence prescribed for the body of a formal field order is preserved.

The ending.

88. The ending contains the authentication of the order and a *statement* of how it is communicated to the command. This statement is an important feature of a field order and is made by the officer signing the order, he being responsible that it is properly distributed.

89. *Titles* are expressed as follows:

Det. 1st Div.
Outpost, 1st Bn. 6th Inf.
Advance Guard, 1st Sq. 5th Cav.
1st Brig. 1st Div.

In the above titles "Det. 1st Div." means that the command is composed of troops from the first division; "Advance Guard, 1st Sq. 5th Cav.," means that the command is the advance guard of the First Squadron, Fifth Cavalry, etc.

The title may appear in the order creating a command, thus: "The First Battalion will constitute the *advance guard*," or it may be evolved from the nature of the operations, thus: "China relief expedition;" "Army of Cuban pacification."

The title with place, date, and number thus fully identifies an order.

90. Whether named in the title or elsewhere in the order, tactical organizations are designated as follows, the abbreviated forms being preferred:

Complete organizations:
Co. A, 1st Inf.
Cos. A & B, 1st Inf.
1st Bn. 2d Inf.
3d Inf.
Btry. A, 1st F. A.
Tr. B, 1st Cav.
2d Sq. 5th Cav.
Co. E, Engrs.
Co. A, Sig. Corps (or Troops).
Amb. Co. No. 1.
1st F. Hosp.

Fractional organizations:
Co. A, 1st Inf. (less 1 plat.).
1 plat. Co. A, 1st Inf.; 1st Plat. Co. A, 1st Inf.
18th Inf. (less 6 cos.); or Hq. & 6 cos. 18th Inf.
3d Brig. (less 2 regs.).
1st Plat. Btry. F, 6th F. A.
5th Sec. Btry. B, 3d F. A.
1 squad, Tr. B, 3d Cav.; 1st Squad, Tr. B, 3d Cav.
Tr. H, 8th Cav. (less 3 plats.).
1 sec. Co. B, Engrs.
2 squads, Co. A, Sig. Corps.
Det. Amb. Co. No. 1.
Det. 2d F. Hosp.

When a fraction of an organization can not be designated by naming one or more of the subdivisions, it receives the generic title of "detachment."

91. A *detachment* is a body of troops separated from a higher command and intrusted with a special mission.

Nearly every command of any size is composed of troops from the different arms or special services, or both, and when not constituting a division, brigade, or other authorized unit, the question arises whether to call such a command a "detachment" or to give it the tactical designation of the predominating arm or special service; if there is a predominating element the title of the command is that of the predominating element, unless the proportion of an auxiliary arm or special service equals or exceeds that prescribed for a division, in which case the command is a detachment. For example: A command consisting of 1 regiment of infantry and 1 squadron is a detachment, while the title of a command consisting of 1 regiment of infantry and a troop is that of the regiment.

92. Dates in the heading are abbreviated thus: 4 Feb. 08, 2-45 P. M.

No abbreviations are used in the body of the order except A. M. and P. M. for morning and afternoon, the authorized abbreviations for tactical organizations, and those customary in designating rank. In naming a night both days should be mentioned thus: Night 4/5 Feb. 08. To designate "noon" and "midnight" these words are written.

93. Before orders are issued they are carefully tested to see that the entire command is accounted for.[a]

[a] For forms of orders see Appendix D.

ARTICLE IV.

THE SERVICE OF SECURITY.

GENERAL PRINCIPLES.

94. The *service of security* embraces all those measures taken by a command to protect itself from observation, annoyance, or surprise by the enemy.

Ordinarily this security is provided in part by the independent cavalry, which, operating far to the front, checks the opposing cavalry and sends in timely information of the movements of the enemy. But as a command is not always preceded by independent cavalry, and as this cavalry can not always prevent sudden incursions of the enemy or discover his patrols, additional security becomes necessary. This is obtained by covering the *immediate* front of the command with detachments. These detachments remain constantly on guard, ward off minor attempts of the enemy, and check his more resolute advances long enough to enable the main body to prepare for action.

On the march these detachments are called *advance*, *flank*, or *rear guards;* in camp or bivouac they are called *outposts.*

As the principal duty of these bodies is the same, viz, that of protecting the main body, there is a general similarity in the formations assumed by them. There is (1) the *cavalry covering the front;* next (2) a *group*, or *line of groups, in observation;* then (3) the *support*, or *line of supports*, whose duty is to furnish the observation groups, and check the enemy pending the arrival of reinforcements; still further in rear is (4) the *reserve.*

95. When it becomes necessary to provide for the security of a command, the commanding officer issues the proper field order, in which he details certain troops for this duty, names their commander, and gives such instructions as may be necessary. In large commands troops from all arms are generally detailed, the proportion from each being determined by the tactical situation; but commanders *detail no more troops than the situation actually requires*, as an excessive amount of such duty

rapidly impairs the efficiency of a command. As a general rule troops detailed on the service of security vary in strength from one-twelfth to one-third of the entire command, but seldom exceed the latter. When practicable, the integrity of tactical units is preserved.

In mixed commands infantry usually forms the greater part of the troops detailed to the service of security. Cavalry is assigned to that duty whenever advantage can be taken of its superior mobility. The kind and amount of artillery are determined by circumstances.

Engineer, signal, and sanitary troops are detailed when required.

The field trains of troops on this duty generally remain with the field train of the command, but if conditions permit they may join their organizations.

Troops on the service of security pay no compliments; individuals salute when they address, or are addressed by, a superior officer.

96. The principles laid down in this article, though primarily intended for a force of all arms, are of general application and apply to bodies of infantry or cavalry acting independently.

ADVANCE GUARDS.

97. Duties.—*The primary duty of an advance guard is to insure the safe and uninterrupted advance of the main body.*

Specifically its duties are:

1. To guard against surprise and furnish information by reconnoitering to the front and flanks.

2. To push back small parties of the enemy and prevent their observing, firing upon, or delaying the main body.

3. To check the enemy's advance in force long enough to permit the main body to prepare for action.

4. When the enemy is encountered on the defensive, to seize a good position and locate his lines, *care being taken not to bring on a general engagement unless the advance guard commander is empowered to do so.*

5. To remove obstacles, repair the road, and favor in every way possible the steady march of the column.

98. When a commander issues orders (march order) for an advance, he designates the tactical components of the command (independent cavalry, advance guard, main body, etc.), names

the commanders, and gives the necessary instructions for each. The strength and composition of these components are determined by the commander after careful study of the military situation.

99. Strength and Composition.—Subject to variation according to the situation, one-ninth to one-third of a command may be assumed as a suitable strength for the advance guard. The larger the force, the larger in proportion is the advance guard, for a large command takes relatively longer to prepare for action than a small one. In large commands it is usually composed of all arms, the proportions depending on the nature of the work, character of the country, etc. In open country it should be strong in cavalry and field artillery, but artillery is seldom assigned to the advance guard of a command not larger than a brigade. In such cases, however, when there is artillery with a command, an officer of that arm usually accompanies the advance guard for purposes of artillery reconnaissance. In swampy country or jungle it may be formed of infantry alone. When not preceded by independent cavalry, the advance guard must, as a rule, be strong in cavalry; in such cases the commander determines whether to attach all of the divisional cavalry to the advance guard, or to retain a part for some special service.

Machine guns materially increase the effectiveness of an advance guard. They are useful in holding bridges, defiles, etc., until reinforcements can be brought up.

Engineers are usually attached to an advance guard to remove obstacles, repair roads, etc. Circumstances may also require a bridge train to be attached.

The supreme commander generally retains control of the signal troops, and establishes such lines of information as he deems necessary. However, when the nature of the country favors communication by signaling, signal troops may be attached to the advance guard.

Sanitary troops usually accompany an advance guard.

The field trains of troops on advance guard duty generally accompany the field train of the main body.

100. Distance from Main Body.—The distance at which the advance guard precedes the main body, or the main body follows the advance guard, is stated in the "march order." In small commands, where there is no difficulty in keeping touch with the main body, the march order generally requires the advance guard to

regulate its march on the main body; but where the advance guard is large, or moves at a considerable distance in advance of the main body, the latter regulates its march on the advance guard.

While the distance between these two bodies should be great enough to prevent needless interruptions in the march of the main body, and to give the latter time to deploy should the enemy be encountered, it should never be so great that timely support of the advance guard becomes impracticable.

Forming the advance guard.

101. Advance Guard Commander.—On receipt of the march order, the advance guard commander estimates the situation and, at the proper time, issues the *advance guard order.* This order is written, dictated, or verbal, according to circumstances, divides the advance guard into its tactical components (advance cavalry, support, etc.), and gives the necessary instructions for each.

The advance guard commander is mounted and goes wherever he deems his presence necessary, though his habitual station is at the head of the reserve, or with the support when there is no reserve. He conducts the advance so as not to interrupt the steady march of the main body, and when ordered to move at a certain distance in front of the latter, maintains the necessary connection therewith. He bears constantly in mind the duties of an advance guard, and studies the ground with a view to tactical dispositions should the enemy be encountered.

102. Distribution of Troops.—An advance guard order generally prescribes the following distribution of troops:

Advance cavalry.
Support.
Reserve.

The manner in which the advance guard cavalry is employed depends upon the situation. Its proper place is in the direction of the enemy, and generally all or the greater part is used as advance cavalry. If weak in numbers, it may be assigned to the support.

103. Advance Cavalry.—The advance cavalry is that part of the advance guard cavalry preceding the support. It reconnoiters far enough to the front and flanks to guard the column against surprise by *artillery fire*, and to enable timely information to be sent to the advance guard commander. If preceded by independent cavalry,

the advance cavalry maintains connection therewith; if not, it pushes well out and endeavors to find the enemy, performing to a limited extent the functions of independent cavalry. Its commander should be bold, energetic, and capable; he sees that his command is supplied with articles required by patrols; his orders are usually verbal.

104. Support.—Following the advance cavalry is the support, varying in strength from one-fourth to one-half of the advance guard. In mixed commands it consists of infantry, to which engineers may be attached. If there is no advance cavalry, some cavalry should be attached to the support for reconnoitering duty.

As the support moves out it sends forward an *advance party* several hundred yards, the distance varying with the terrain and the size of the command.

The *advance party* supplements the work of the advance cavalry, reconnoitering to the front and flanks to guard the support against surprise by *effective rifle fire*. The patrol preceding the advance party on the line of march is called the *point*, and is commanded by an officer or an experienced noncommissioned officer. As far as practicable, reconnoitering to the flanks is done by mounted scouts, thus lessening the work of foot soldiers.

With the advance cavalry in front, but little reconnoitering by infantry is necessary, and the advance party is relatively small—one-eighth to one-third of the support. If there is no advance cavalry, the advance party is made stronger (about one half of the support) and the flanks are guarded, if necessary, by additional patrols sent out from the support and even from the reserve.

The *support commander* ordinarily marches with the advance party, but goes wherever needed. He is provided with a map, and with native guides if the latter be necessary, and is habitually mounted. He sees that the proper road is followed; that guides are left in towns and at crossroads; that necessary repairs are made to roads, bridges, etc., and that information of the enemy or affecting the march is promptly transmitted to the advance guard commander. He endeavors promptly to verify information of the enemy.

105. Reserve.—The reserve follows the support at several hundred yards distance. It consists of the remainder of the infantry and engineers, the artillery and the sanitary troops. The artillery

usually marches near the head of the reserve, the engineers (with bridge train, if any) and special troops, at the rear.

106. Reconnaissance.—In conducting the reconnaissance the patrols are, as a rule, small—from two to six men. If additional protection is necessary, a flank guard covers the threatened flank. The flanking patrols, whether of the advance cavalry or advance party, are sent out to examine the country wherever the enemy might be concealed. If the nature of the terrain permits, these patrols march across country or along roads and trails paralleling the march of the column. For cavalry patrols this is often possible; but with infantry patrols and even with those that are mounted, reconnaissance is generally best done by sending the patrols to high places along the line of march to overlook the country and examine the danger points. These patrols report or signal the results of their observations and, unless they have other instructions, join their units by the most practicable routes, other patrols being sent out as the march proceeds and as nature of the country requires.

Deserters, suspicious characters, and bearers of flags of truce, the latter blind-folded, are taken to the advance guard commander.

Civilians are not permitted to precede the advance guard.

107. Communication.—Communication between the fractions of an advance guard and between the advance guard and main body is maintained by wire, messenger service, or signals.

Advance guard of a small command.

108. In forming the advance guard of a command smaller than a brigade, the foregoing distribution is modified, depending upon the situation. A company or troop usually sends forward only a point; a battalion or squadron an advance party with its point; for a single regiment a reserve in the advance guard is seldom necessary.

Advance guard of a cavalry command.

109. Cavalry marching independently, adopts formations for its advance guard similar to those described above, though the distances are generally greater. It is kept well in hand, the advance guard as a rule being small. An advance party with a few patrols is usually enough for a squadron.

Advance guard of a division (independent).

110. Assuming that the advance guard consists of two regiments of infantry, one squadron, one battalion of artillery, one company of engineers, and a detachment of sanitary troops, the distribution (with independent cavalry) *might* be made as follows:

Independent cavalry.
(One or two marches.)
Advance guard.

Advance cavalry.—One squadron with point and flanking patrols; communication maintained with independent cavalry. (Point of advance cavalry to point of advance party at least 4 or 5 miles.)

Support.—Two battalions of infantry and mounted detachment of engineers. The support sends forward its *advance party*, one company, about 500 yards; the advance party is preceded from 300 to 500 yards by its *point*.

(About 1,000 yards.)

Reserve—in order of march.—One battalion infantry; one battalion artillery; one regiment infantry; company engineers (less detachment); sanitary troops. (There may be a detachment of signal troops, though the division commander generally retains control of those troops.)

(One to two miles.)
Main Body.

Security for the head of a retreating force.

111. In retreat a column is preceded by a body of troops designated "leading troops," whose principal duty is to clear the road of obstacles and facilitate the withdrawal of the command. The strength and composition of such troops are determined by the situation. Engineers are generally necessary; cavalry is assigned to this duty to afford protection against guerillas or small hostile parties that may have succeeded in reaching the rear of the command. If the rear is seriously threatened the leading troops march practically as an advance guard.

FLANK GUARDS.

112. The flanks of a column are protected in part by the advance guard, which carefully examines the ground on both sides of the line of march. It may be necessary, however, to provide additional security for a flank threatened by the enemy. This is done by sending a detachment, called a *flank guard*, to cover the exposed flank.

Flank guards vary in size from patrols to detachments of all arms. Their composition and formation depend upon the situation, though they are generally strong in cavalry on account of the necessity for rapid reconnaissance and communication. They may be composed exclusively of that arm, but when strong positions are to be held, or prolonged resistance to the enemy is expected, troops of all arms are necessary. Their duties are similar to those of an advance guard. They keep in constant touch with the column either by wire, signal, or messenger service.

Flank guards may be sent out by an advance guard (made strong for that purpose) or by the main body; they march in a direction generally parallel to the column, keeping abreast of the unit from which detailed, or are sent to occupy favorable positions on a threatened flank, remaining there until the whole column has passed. In the latter case they join the rear guard and return to their commands at the end of the day's march. As a flank guard usually marches a greater distance than the body from which detailed, it is generally sent out in advance. On account of the hazardous nature of the operations, the field train of a flank guard usually conforms to the movement at a safe distance, or remains with the train of the main body.

113. Flank Marches.—When the main body executes a flank march near the enemy the flank guard becomes a body of great importance. If the flank march is due to a considerable change of direction in the march of the column, it is generally advisable to convert the advance guard into a flank guard, and detail a new advance guard to precede the column.

114. The flanks of a column must be protected throughout its length; in long columns the large units may be directed to provide their own flank protection.

REAR GUARDS.

115. The rear guard is charged with the important duty of covering the retreat.

When a commander decides to retreat he issues the necessary *order* in which he designates the component fractions into which the command is divided (leading troops, main body, rear guard, etc.), names the commanders, and gives instructions for each. During a retreat the outpost for the night usually forms the rear guard of the following day.

116. Strength and Composition.—The strength of a rear guard depends upon the nature of the country and the strength and character of the pursuing force. It can not, like the advance guard, count on the support of the main body. On the other hand, it more often has an opportunity to fight on ground of its own selection. In good defensive positions, with natural or artificial obstacles, it gains valuable time by forcing the enemy to deploy and make detours.

As rear guards must be prepared to make stubborn resistance and submit to sacrifices, they are relatively stronger than advance guards. Their strength varies from one-third to one-sixth of the entire command.

The composition of a rear guard is similar to that of an advance guard, though the proportion of artillery is usually greater, as that arm can force the enemy to deploy at long range. As all measures for covering the retreat are in the hands of the rear guard commander, and as all information concerning the enemy is sent direct to him, the use of cavalry independently is exceptional. However, cavalry not needed with the rear guard may be formed into an independent body with horse artillery under the control of the supreme commander. This cavalry, by taking up successive positions on the flanks of the line of march, may embarrass the enemy and greatly facilitate the retreat. But whether there be independent cavalry or not, the rear guard should, as a rule, be strong in cavalry.

Machine guns are especially useful in the passage of defiles and in covering the crossings of rivers.

Engineers and sanitary troops are usually assigned to rear guards.

The troops of a rear guard are selected from those that have had previous local successes, or have suffered little loss and are comparatively fresh.

Forming the rear guard.

117. Rear Guard Commander.—The officer selected to command a rear guard should possess, to an eminent degree, the qualities of courage and quickness of decision combined with good judgment and discretion, as the safety of the entire command is in his hands. On the receipt of the proper order he organizes his command and issues a *rear guard order*.

118. Distribution of Troops.—The proximity and conduct of the enemy controls, to a large extent, the formation of a rear guard. When it is not necessary to withdraw in deployed lines, the greater part of the rear guard marches on the road in column of route, taking up a formation resembling that of an advance guard faced to the rear. The distribution of troops is therefore similar to that of an advance guard, namely:

Reserve.
Support.
Rear cavalry.

The rear cavalry is that portion of the rear guard cavalry following the support. The support, as in an advance guard, is divided into two parts; that part nearest the enemy is called the *rear party* and marches with a *rear point*. Mounted engineers usually accompany the support and may be attached to the rear party. Where the cavalry is of sufficient strength and has horse artillery attached, the entire rear guard, excepting the reserve, may be composed of that arm. The reserve is composed mainly of infantry and artillery.

119. Distances.—The distances of the rear guard from the main body and between the fractions of the rear guard are about the same as in the case of an advance guard. If marching at night the rear guard draws nearer the main body.

120. Communication.—Communication is maintained by signal troops and messengers.

Rear guard in action.

121. The withdrawal of defeated troops is delayed, if possible, until night. If it becomes necessary to begin a retreat while an engagement is in progress, the rear guard is organized and takes up a defensive position, generally behind the fighting line; the latter then falls back and assembles under cover of the rear guard.

The rear cavalry gives way before the enemy's pursuit only when absolutely necessary, maintains communication with and sends

information to the rear guard commander, and pays special attention to the weak points in the retreat, namely, the flanks. It makes use of every kind of action of which it is capable, according to the situation, and unless greatly outnumbered by hostile cavalry should of itself cause considerable delay to the enemy.

When the enemy is conducting an energetic pursuit the rear guard effects its withdrawal by taking up a succession of defensive positions and compelling the enemy to attack or turn them. When the enemy's dispositions for attack are nearly completed, the rear guard begins to fall back, the cavalry on the flanks being usually the last to leave. The commander designates a part of the guard to cover the withdrawal of the remainder; the latter then falls back to a new position in rear, and in turn covers the withdrawal of the troops in front. These operations compel the enemy continually to deploy or make turning movements, and constantly retard his advance. The artillery greatly facilitates the work by taking up successive positions where it can fire on the enemy at long range, thus compelling him to deploy at a distance and to march across country in a deployed formation.

In occupying rear guard positions it is desirable (1) to make as strong a display of force as possible, and (2) to make sure of good lines of retreat. These lines, and the successive positions, should be reconnoitered by staff officers, and the march of the troops facilitated by the cutting of wire fences and the removal of other obstructions.

The pursuit may be further delayed by obstacles placed in the enemy's path; bridges are burned or blown up, boats removed or destroyed, fords and roads obstructed, tracks torn up, telegraph lines cut, and houses, villages, woods and fields fired. Demolitions and obstructions are prepared by engineers, assisted, if necessary, by other troops detailed from the reserve, and completed by the mounted engineers of the rear party at the last moment.

The instructions of the supreme commander govern in the demolition of important structures.

Rear guard of an advancing force.

122. If there is a possibility that the rear of the column may be attacked, a rear guard of suitable strength and composition is provided. If the hostile attempts are confined to guerillas, marauders, etc., the guard should be strong in cavalry. Its conduct is practically the same as that of the rear guard of a retreating force. It

generally marches in rear of the field trains and sanitary troops, those organizations following the combatant troops without distance.

OUTPOSTS.

123. Duties.—The duties of an outpost may be summed up in the words *reconnaissance, observation, and resistance.*

Specifically its duties are:

1. To protect the main body so that the troops may rest undisturbed.

2. In case of attack, to check the enemy long enough to enable the main body to make the necessary dispositions.

124. When a commander issues orders (halt order) for forming camp or bivouac, he designates the troops for the outposts, names the commander, points out the general outpost line to be held, and gives instructions for the encampment of the remaining troops. To enable the outpost commander to study the situation, this order *should reach him if practicable before the end of the day's march.*

During an advance, outposts are usually detailed from the advance guard. In retreat the outpost for the night usually forms the rear guard of the following day. If the command remains in camp or bivouac, the new outpost generally goes on duty at daybreak.

Officers on outpost duty are given great latitude, so long as their dispositions insure ample warning and adequate resistance.

The vigilance of outpost troops must be unceasing, but they should avoid bringing on combats or unnecessarily alarming the command. Firing disturbs the rest of troops, and if frequently indulged in ceases to be a warning.

No trumpet signals, except "to arms" or "to horse," are sounded, and all unnecessary noises are avoided.

If it is desirable to annoy or deceive the enemy, the supreme commander gives the necessary orders. Countersigns are used in the field in exceptional cases only. During sieges their use is more common.

125. Strength and Composition.—The strength and composition of an outpost are determined by the commander after a careful study of the situation.

Subject to variation according to the situation, an outpost, as a rule, does not exceed one-sixth of the entire command, and should be less if conditions permit. If at the end of a march the halt is

for the night only, and danger is not imminent, simple measures like detached posts and a few patrols generally suffice. If there is independent cavalry covering the front, a strong outpost is generally not required. On the other hand, if a command is in close proximity to hostile troops and expecting an attack, the outpost should be strong, occupying practically a defensive situation.

When troops in action suspend hostilities for the night they generally bivouac in line of battle. In such cases, and during siege operations, surprise is prevented by *posting sentinels and sending out patrols;* outposts in front only interfere with the effective fire of the line. In certain situations searchlights are useful.

A mixed outpost is composed principally of infantry. The infantry is charged with the duty of local observation, especially at night, and with resisting the enemy long enough for the main body to prepare for action. The cavalry is charged with the duty of reconnaissance, and is very useful in open country during the day.

If the infantry has been severely taxed by marching or fighting, a large part of the outpost may be temporarily formed of cavalry.

That part of the outpost cavalry in front of the line of supports is called the *advance cavalry.* When an outpost is detailed from the advance guard, the advance cavalry of the advance guard becomes the advance cavalry of the outpost and continues the work of reconnaissance until recalled for the night.

Artillery is useful to outposts when its fire can sweep defiles or large open spaces, and when it commands positions that might be occupied by hostile artillery. The guns are carefully concealed or protected, and are usually withdrawn at night.

Machine guns are useful to command approaches and check sudden advances of the enemy.

Engineers are usually attached to an outpost to assist in constructing entrenchments, clearing the field of fire, and opening communications laterally and to the rear.

The supreme commander generally retains control of the signal troops and establishes a line of information to the reserve and from the reserve to each support and important detached post.

It is generally unnecessary to attach sanitary troops to an outpost, those assigned to the organizations being sufficient.

The field trains of troops on outpost duty generally join their organizations; if an engagement is probable they may be held in rear.

126. Selection and Preparation of Outpost Positions.—The camping ground for the main body is selected by the supreme commander or by a staff officer sent forward for that purpose, due regard being paid to the water supply, fuel, shelter, communications, and available outpost positions.

It is often more a question of making the best of existing conditions than of camping the main body with reference to the selection of an outpost position. Nevertheless the outpost position should be so chosen that the main body can not be reached by the enemy's artillery fire. In large forces the distance of the *line of resistance* from the main body should be two or three miles; for a command smaller than a division the distance is generally less. The line of resistance should have a good view and field of fire to the front and concealment and shelter from the enemy's fire. There should be good communications to the rear and good lateral communications, or at least no impassable obstacles extending from front to rear within the lines. Commanding positions from which a wide extent of country is visible greatly facilitate observation. Well-defined natural features, such as streams, ridges, roads, farther edges of woods, etc., are convenient in designating the limits of an outpost position. A strong defensive line is of greater value than ease of observation; difficulties of observation can be offset by diligent patrolling.

In the presence of the enemy, the outpost covers the front of the main body and extends around the flanks unless the latter are protected by natural obstacles or by other troops. The advance portions of the outpost *habitually* intrench and strengthen their positions, clear the field of fire when practicable, and open or improve communications laterally and to the rear. Obstacles are placed so as to delay the enemy under fire without affording him protection. Barbed wire is often available for this purpose. Distances to conspicuous objects in the foreground and within range are measured or estimated and the men made familiar with the ranges.

The degree of preparation of the outpost position, beyond these essentials, depends upon the length of time it is to be occupied. Whenever a command is to remain in the same place more than one day, or the ground is to be subsequently occupied by other troops, the rules for sanitation of camps and bivouacs are carefully observed.

Establishing the outpost.

127. On receipt of the "halt order" the outpost commander estimates the situation and issues the outpost order. This order gives the approximate line of resistance to be held, divides the outpost into its tactical components (advance cavalry, supports, etc.), and gives the necessary instructions for each.

From his map and from the information furnished in the halt order, the outpost commander should be able *to decide upon the essential dispositions while the troops are still in march;* that is, he should be able to divide the line of resistance into sections, assign a support to each, designate the disposition of the reserve, and give instructions for the cavalry.

The limits of each section are carefully designated thus: From —— exclusive (or inclusive), to —— exclusive (or inclusive). The length of a section varies with the terrain and the strength of the support. A support consisting of one battalion covers with its outguards a section rarely exceeding 2,500 yards.

128. Distribution of Troops.—The outpost order usually prescribes the following distribution of troops:

Advance cavalry.
Supports.
Detached post or posts.
Reserve.

The reserve, supports, and detached posts proceed to their respective positions by the shortest routes, providing for their own security.

As soon as practicable the outpost commander makes a careful inspection of the outpost position and orders such changes in the dispositions as he deems necessary. As the movement of troops across country, especially at night, is difficult, he places the supports so as to command the roads. For this reason, when dividing the line of resistance into sections, he is careful to see that the dividing lines are not on roads or where the enemy can readily approach.

When practicable, outposts should be in position before dark, so that the troops can *become acquainted with the country* and make preparation for defense.

If after making his inspection the outpost commander deems *extensive* changes necessary, he issues a second outpost order embodying the new disposition.

He sees that the supports connect with each other, and opens communications laterally and between the supports and reserve.

As an outpost usually extends around the flanks, covering all approaches from the direction of the enemy, the ground occupied resembles in its general outlines an open fan.

In front, reconnoitering toward the enemy, is the advance cavalry; then comes the *line of observation* occupied by small groups of men sent out from the supports; in rear of the line of observation is the *line of resistance*, on or near which the supports are posted, and which becomes *the first line of battle* if the enemy makes a determined advance; in rear of the line of resistance, centrally located, is the reserve; still farther in the rear is the main body. In small commands the reserve is generally omitted, the main body taking its place.

The nature of the country may cause the line of observation practically to coincide with the line of resistance.

It is also possible for the line of resistance to be in advance of the line of observation; for example, a low range of hills crossing the enemy's line of advance might be occupied by placing trenches along the foot to secure a grazing fire, sentinels to watch for the enemy's approach being posted along the crest in rear. At night the front of such a position is covered by patrols.

129. Changes for the Night.—If extensive changes of position for the night are contemplated, they are provided for in the second outpost order referred to above and, when necessary to conceal them from hostile observation, are carried out after dusk.

In civilized warfare, it is seldom necessary to draw the outpost closer to the main body at night in order to diminish the front; nor is it necessary to strengthen the line of observation, as the enemy's advance in force must be confined to the roads. The latter are therefore strongly occupied, the intervening ground being diligently patrolled.

In very open country, or in war with savage or semicivilized people familiar with the terrain, special precautions are necessary.

130. Advance Cavalry.—By day, the advance cavalry reconnoiters in advance of the line of observation. If there is independent cavalry in front, the advance cavalry maintains connection therewith and reconnoiters only where necessary. At night, however, that the horses may have needed rest and because the work can be better done by infantry, the greater part of the cavalry is usually

withdrawn in rear of the supports, generally joining the reserve, small detachments being assigned to the supports for patrolling at a distance.

With efficient cavalry in front, the work of the infantry on the line of observation is reduced to a minimum.

General instructions for the advance cavalry are given by the outpost commander, but details are left to the subordinate.

131. Supports.—The supports comprise about one-half the infantry of the outpost. They are numbered from right to left. The section of the line of resistance which each is to occupy is given in the outpost order.

As each support arrives upon the ground it is to occupy, its commander (who should precede the support when practicable and make a rapid examination of the terrain), adopts temporary measures for security, and sends out observation groups, varying in size from four men to a platoon, to watch the country in the direction of the enemy. These groups are called *outguards* and are sufficient in number to cover the front of the supports and to connect where necessary with the outguards of the adjoining supports. The line occupied by the outguards is the *line of observation.*

After tentatively establishing the outguards, the commander selects a defensive position on the general line of resistance, where he not only commands the approaches but can render assistance to the adjoining supports, and gives instructions in regard to intrenchments and obstacles. He then makes a more careful reconnaissance of the section assigned him, rectifies the positions of the outguards, gives them instructions as to their duties in case of attack or when strangers approach their posts, points out lines of retreat in case they are compelled to fall back to the supports, selects, if necessary, places for additional posts to be occupied at night or during fog, sees that suitable connections are made between his and the adjoining outguards, and between his and the adjoining supports, and questions subordinate commanders to test their grasp of the situation and knowledge of their duties. On returning to the support he sends a report with a *sketch* to the outpost commander showing the dispositions made.

After the line of observation has been established, the support stacks arms and the men are permitted to remove their equipments, cartridge belts excepted.

One or more sentinels are posted over the supports to guard the property and watch for signals from the outguards.

Fires are concealed as much as possible, and the messing is done by reliefs.

Mounted messengers ordinarily do not unsaddle; they rest, water and feed as directed.

132. Outguards.—Outguards vary in size from four men to a platoon, but are no larger than necessary to watch the country, drive back small hostile patrols, and furnish reliefs for the sentinels. They are numbered from right to left for each support. Their duty is to maintain uninterrupted observation of the ground in front and on the flanks; to report promptly hostile movements and other information, relating to the enemy; to prevent unauthorized persons crossing the line of observation; to drive off small parties of the enemy, and to make temporary resistance to larger bodies. Outguards of eight men are convenient, as they furnish, besides the commander, relief for double sentinels and an extra man for messenger duty and to assist in patrolling.

When an outguard reaches the line of observation, it takes a concealed position where the men are allowed to rest, and posts one or more sentinels a short distance—seldom more than 30 or 40 yards—in advance to overlook the country. Single sentinels are used in open country in the day time; double sentinels in close country, in thick weather, at night or when special vigilance is necessary.

The intervals between outguards and their distances from the support depends upon the situation and terrain. The line of observation is not necessarily continuous, but avenues of approach must be carefully guarded. At night it may be necessary to push one or more of the outguards farther to the front.

When necessary, outguards patrol along the line of observation between the posts; patrolling to the front is performed from the support. Communications with adjoining outguards and with the support is maintained by means of signals, messengers, or wire.

When resting, members of an outguard retain their weapons in position for immediate use and do not remove their equipments. Fires are not permitted, unless in cold weather they become necessary, and then they are concealed.

133. Sentinels.—If practicable, troops on outpost duty are concealed, and all movements made so as to avoid observation by the

enemy; sentinels, however, are posted so as to have a clear view to the front, and if practicable, to be able, by day, to see the sentinels of the adjoining outguards. Double sentinels are posted near enough to each other to communicate easily in ordinary voice.

Sentinels are generally on duty two hours out of six. For every sentinel and for every patrol there should be at least three reliefs; therefore, one-third of the strength of the outguards gives the maximum number of men that should be on duty as sentinels and patrols at one time.

Skillful selection of the posts of sentinels increases their field of observation. High points, under cover, are advantageous by night as well as by day; they increase the range of vision and afford greater facilities for seeing lights and hearing noises. Observers with good field glasses may be placed on high buildings, in church steeples, or in high trees.

Glittering objects on uniform or equipment should be concealed. It is seldom necessary to fix bayonets, except at night, in dense fog, or in very close country.

Reliefs, visiting patrols, and inspecting officers approach sentinels from the rear, remaining under cover if possible.

The *instructions* given a sentinel *on the line of observation* embrace the following:

Where the enemy is or is supposed to be and the direction from which he may be expected to come; the names of villages, streams, and prominent features in sight and where the roads lead.

The number (if any) of his post, and the number of his and of the adjoining outguards; the position of the support; the line of retreat to be followed if the outguard is compelled to fall back; the position of advance detachments and whether friendly patrols are operating in front.

He watches to the front and flanks without intermission, and devotes special attention to unusual or suspicious occurrences; if he sees indications of the enemy, he at once notifies his immediate superior; in case of imminent danger, or when an attack is made, he gives the alarm by firing rapidly.

By day, officers, noncommissioned officers and detachments recognized as part of the outpost, and officers known to have authority to do so, are allowed to pass in or out; all others are detained and the outguard commander notified.

At night, when persons approach his post, the sentinel comes to a ready, halts them and notifies the outguard commander; the latter challenges, ascertains their identity, and acts accordingly.

Individuals who fail to halt, or otherwise disobey a sentinel, are fired upon after a second warning, or sooner if they attempt to attack or escape.

Deserters are required to lay down their arms, and a patrol is sent out to bring them in. Deserters pursued by the enemy are ordered to drop their arms and an alarm is given; if they fail to obey they are fired upon.

Bearers of flags of truce and their escorts are halted and required to face outward; they are then blindfolded and disposed of in accordance with instructions from the support commander; if they fail to obey they are fired upon. No conversation with them is permitted.

At night a sentinel remains practically stationary, moving about for purposes of observation only; he does not sit or lie down unless authorized to do so. In the day time he makes use of natural or artificial cover and assumes such positions as give him the best field of view. He informs passing patrols of what he has seen. His weapon is habitually loaded and locked and carried at will.

134. Detached Posts.—Detached posts are practically the same as the supports of an outpost, but occupy positions at some distance from the general line of resistance. They may be sent out to hold points which are of importance to the outpost cavalry, such as a ford or a junction of roads; or to occupy positions especially favorable for observation but too far to the front to be included in the line of observation; or to protect flanks of the outpost position. Such posts are generally established by the outpost commander, but a support commander might find it necessary to establish a post practically detached from the rest of his command.

Special orders are given the commander of a detached post by the officer sending him out.

135. Reserve.—The reserve forms a general support for the line of resistance. It is therefore centrally located near the junction of roads coming from the direction of the enemy, and in concealment if practicable.

Of the troops detailed for outpost duty about one-half of the infantry, generally all of the artillery, and the cavalry not otherwise employed are assigned to the reserve.

The arms are stacked, and the equipments (except cartridge belts) may be removed. Roads communicating with the supports are opened.

When necessary the outpost order states what is to be done in case of attack, designates places of assembly, and provides for interior guards. Additional instructions may be given for messing, feeding, watering, etc. In the vicinity of the enemy or at night a portion of the infantry may be required to remain under arms, the cavalry to hold their horses, cinchas loosened, the artillery to remain in harness, or take up a combat position.

In case of alarm, the reserve prepares for action without delay, and word is sent to the main body. In combat, the reserve reinforces the line of resistance, and if unable to check the enemy until the arrival of the main body, delays him as much as possible.

The distance of the reserve from the line of resistance varies, but is generally about half a mile.

The distance from the main body to the reserve varies with the size of the former, the nature of the terrain, situation, etc.

136. Communication.—Communication between the parts of an outpost and between the reserve and main body is maintained by wire, signals, or messenger service.

137. Small Commands.—The outpost of a small command may consist of outguards only, without supports or reserve, the main body remaining in such state of readiness as the situation demands.

Outpost patrols.

138. Outpost patrols are divided into those which operate beyond the lines and those whose duty lies principally within the lines. The former, called *reconnoitering patrols*, scout in the direction of the enemy; the latter, called *visiting patrols*, maintain communication between the parts of the outpost and supervise the performance of duty on the line of observation.

Reconnaissance should be continuous. Though scouts and detachments of cavalry remain in contact with the enemy, or at least push forward to a considerable distance, more detailed reconnaissance by infantry patrols in the foreground must not be neglected.

Reconnoitering patrols are composed of at least two men and a skillful leader who, in important cases, should be an officer. They

obtain information, ascertain the presence of the enemy, or discover his approach.

All patrols, when they cross the line of observation, inform the nearest sentinel of the direction in which they are to advance; on their return they similarly report what they have seen of the enemy; signals are agreed upon so that they can be recognized when returning.

Any ground near the line of observation which might afford cover for troops, or for scouts or spies, and the approach to which cannot be observed by sentinels, is searched frequently by patrols.

Definite information concerning the enemy is reported at once. Patrols fire only in self defense or to give the alarm.

Supports on the flank of an outpost position patrol the country on the exposed flank.

Visiting patrols usually consist of a noncommissioned officer and two or three men. They are sent out by the support every hour or two to the outguards and adjoining supports. They examine suspicious points too distant for the sentinels to inspect, relieve sick or wounded sentinels, and take charge of detained persons.

Visiting patrols and reliefs should not march in the open and thereby expose the position of sentinels.

Examining posts.

139. An examining post is a small detachment under the command of an officer or a noncommissioned officer, stationed at some convenient point to examine strangers brought in by the outguards or patrols.

Though the employment of examining posts is not general in field operations, there are many occasions when their use is important, for example: When the outguards do not speak the language of the country or of the enemy; when preparations are being made for a movement and strict scrutiny at the outguards is ordered; at sieges, whether in attack or defense. When they are used, strangers approaching the line of observation are passed along the line to an examining post.

No one except the commander is allowed to speak to persons brought to an examining post. Prisoners and deserters are at once sent under guard to the rear.

Relieving the outpost.

140. Ordinarily, outposts are not kept on duty longer than twenty-four hours. In small commands and in temporary camps or bivouac they are generally relieved every morning. After a day's advance the outpost for the night is usually relieved the following morning when the support of the new advance guard passes the line of resistance. In retreat the outpost for the night usually forms the rear guard for the following day, and is relieved when it passes the line of observation of a new outpost.

Evening twilight and shortly before dawn are hours of special danger. The enemy may attack late in the day in order to establish himself on captured ground by intrenching during the night; or he may send forward troops under cover of darkness in order to make a strong attack at early dawn. Special precaution is therefore taken at those hours by holding the outpost in readiness, and by sending patrols in advance of the line of observation. If a new outpost is to be established in the morning, it should arrive at the outpost position at daybreak, thus doubling the outpost strength at that hour.

When once in position, the fractions of an outpost, except sentinels and patrols, are not relieved, as a rule, during their tour, unless on duty longer than twenty-four hours. Outguards that have become familiar with the country during the daytime should remain on duty that night. Sentinels are relieved once in two hours, or oftener, depending on the weather. The work of patrols is regulated by the support commanders.

Commanders of the various fractions of an outpost turn over their instructions and special orders, written and verbal, to their successors, together with the latest information of the enemy, and a description of the important features of the country. When practicable, the first patrols sent out by the new outpost are accompanied by members of the old outpost who are familiar with the terrain. When relieved the old outguards return to their supports, the supports to the reserve, and the latter to the main body; or, if more convenient, the supports and reserve return to the main body independently, each by the shortest route.

When relieved by an advance guard, the outpost troops ordinarily join their units as the column passes.

Cavalry outpost.

141. Independent cavalry covering a command or on special missions, and occasionally the advance cavalry of a mixed command, bivouac where night overtakes them, and in such cases furnish their own outposts. The latter are established in the main according to the foregoing principles, care being taken to confine outpost work to the lowest limits consistent with safety. No precaution, however, should be omitted, as the cavalry is generally in close proximity to the enemy, and often in territory where the inhabitants are hostile.

If a cavalry command is concentrated, the outpost problem presents little difficulty; but if scattered, the solution is not so easy. There is a *line of observation* and a *line of resistance*, and in rear of the latter the main body, or a reserve and a main body if the command is large, the latter division being made more for convenience of camping than for defense.

The line of resistance is occupied by the supports, the latter sending out the necessary outguards and patrols. Each outguard furnishes its own videttes or sentinels. Due to the mobility of cavalry, the distances are generally greater than in an outpost for a mixed command. An outguard of four troopers is convenient for the daytime, but should be doubled at night, and at important points made even stronger. The sentinels are generally dismounted, their horses being left with those of the outguards.

Mounted cavalry at night can offer little resistance; the supports and outguards are therefore generally dismounted, the horses under cover in rear, and the positions strengthened by intrenchments and obstacles. By holding villages, bridges, defiles, etc., with dismounted rifle fire, cavalry can greatly delay a superior force.

There should always be easy communication along the line of resistance to enable the cavalry to concentrate at a threatened point.

When independent cavalry is to form an outpost on a wide front, the outpost order designates the general line of resistance and assigns to each section thereof a squadron or troop as support. A support of one squadron covers with its outguards a section rarely exceeding 2 miles.

As such a line is of necessity weak, the principal reliance is placed on distant patrolling. If threatened by infantry, timely informa-

tion enables the threatened point to be reenforced, or the cavalry to withdraw to a place of safety. If there is danger from hostile cavalry, the roads in front are blocked at suitable points, such as bridges, fords, defiles, etc., by a succession of obstacles and defended by a few dismounted men. When compelled to fall back, these men mount and ride rapidly to the next obstacle in rear and there take up a new position. As the march of cavalry at night is, as a rule, confined to the roads, such tactics seriously delay its advance.

In accordance with the situation and the orders they have received, the support commanders arrange for feeding, watering, cooking, resting, and patrolling. During the night the horses of the outguards remain saddled and bridled. During the daytime cinchas may be loosened, one-third at a time. Feeding and watering are done by reliefs. Horses being fed are removed a short distance from the others.

Independent cavalry generally remains in outpost position for the night only, its advance being resumed on the following day; if stopped by the enemy, it is drawn off to the flanks upon the approach of its own infantry.

ARTICLE V.

MARCHES AND CONVOYS.

GENERAL PRINCIPLES.

142. *A successful march, whether in peace or war, is one that places the troops at their destination at the proper moment and in the best possible condition.* In war, marches are of daily occurrence, and success depends in a great measure upon the skill with which they are conducted.

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

While conforming to other requirements, marches are conducted so as to reduce to a minimum the hardships of the troops.

When possible, ample notice is given so that preparations can be made *without haste.*

The march is habitually at route order.

Troops are informed of the length of halts so that they can take full advantage of the same.

The men are not kept under arms longer than necessary, nor required to carry heavy burdens when transportation is available.

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

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

A forced march is never undertaken unless the situation requires it.

As a rule troops on the march pay no compliments; individuals salute when they address, or are addressed by, a superior officer.

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

Conduct of marches.

143. Preparation.—It is the duty of the commander to see that the necessary preparations are made—that the men and animals are in fit condition, that they are properly equipped, that suitable means are provided for the care of the sick, that the transportation is supplied with spare parts, and that ample reserve supplies of all kinds are taken.

144. Forming the Column.—To form the column for a march, the commander issues the necessary orders (march order); if the march is controlled by tactical or strategical considerations, *field orders* are issued; in other cases, *routine orders*.

The march order states the object of the march, gives the distribution of the troops, order of march of the main body, manner of forming the column, etc. If the command consists of two or more columns, the order of the supreme commander generally indicates the march to be made by each column, and the column commanders issue corresponding march orders.

When troops are encamped or bivouacked at some distance from the road, columns are formed by the successive arrival of the fractions at an *initial* or starting point, which, as a rule, is located in the direction of the proposed march. The commander fixes the initial point after considering the position of the troops and the roads by which they can join the column. He also prescribes the hour at which the leading fraction or fractions *clear* the initial point, and, if necessary, the routes to be followed in reaching it. To prevent needless marching, he may designate special initial points for parts of the command.

In drafting march orders, the road space and rate of march of the different fractions of the command and their distances from the initial point must be considered. With foot troops and cavalry marching four abreast, artillery and trains in single column of carriages, the following may be assumed for approximate calculations: Two men per yard for foot troops, one man per yard for cavalry, and 20 yards for each gun, caisson, or wagon.[a]

Commanders of subordinate units examine the route to be followed, calculate the time required, and start their commands accordingly. They may designate initial points for their own commands. *In every case the initial point should be of easy access.*

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[a] For table of road spaces see Appendix E.

When troops are located on or near the roads to be followed, the commander prescribes the hour of starting for the larger units; the subordinate commanders issue corresponding orders for their commands.

When troops march in parallel columns, sections of the country may be assigned for their exclusive use.

145. Distribution of Troops.—The order of march of a column is controlled mainly (1) by the rule requiring the hardships of troops to be reduced to a minimum, and (2) by tactical considerations, the latter being paramount in the presence of the enemy.

Troops march in column, or in two or more columns on parallel roads. During an advance the order of march of a column is generally as follows, the necessary security being provided:

Combatant troops (with combat trains):
1. Cavalry and horse artillery.
2. Infantry and light or mountain artillery.
3. Engineers and signal troops.

Trains, etc.:
4. Field trains and the sanitary troops not attached to regiments, etc.
5. Ammunition, supply, and pack trains.

During a retreat the order of march is practically the reverse of the above.

In mixed commands on a single road, large bodies of cavalry and horse artillery should not be intermingled with foot troops.

A detachment of engineers usually marches near the head of each column to repair roads, strengthen bridges, etc.

Each regiment is followed by an ambulance and a medical officer; if detached, by three ambulances.

Combat trains march in rear of the battalion units to which they belong; they may, however, be assembled at the rear of the larger units when circumstances permit.

Field trains, arranged in the order of march of the troops, and each under a quartermaster, are generally assembled under a chief quartermaster, and march at a suitable distance in rear. When thus assembled, they form the field train of the column to which they belong. At the end of the day's march, these trains, as a rule, join their organizations. To facilitate issues, they march as near their organizations as practicable.

The order of brigades in divisions, regiments in brigades, battalions or squadrons in regiments, and company units in battalions or squadrons are generally changed from day to day—the leading unit one day taking its place at the tail the following, and so on.

On the march, troops, as far as practicable, *keep to the right of the road*, leaving the left free. When the roads are narrow, space should still be left for messengers to pass freely along the column. When roads are soft with mud or heavy with sand or very dusty, it may be advisable to divide the column longitudinally, thus permitting men and animals to pick their way, the middle of the road being left clear. Suffering from heat and dust may thus be materially lessened. Care should be taken, however, not to permit straggling or undue lengthening of the column.

Infantry usually marches in column of squads, column of twos when necessary; *cavalry*, in column of fours on good roads or when compact formation is desirable, otherwise in column of twos; *artillery* in *section column* (single column of carriages), or in double section column if the width of the road permits. On trails, troops march in column of files or troopers. In marching across country, the commander adopts the most advantageous formation.

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

The *hour for the start* depends upon circumstances. As a rule, foot troops do not start before broad daylight; mounted troops, when practicable, about an hour after broad daylight. Both men and animals rest well in the early morning hours.

The signals for striking camp and putting the command in march, such as the *general, boots and saddles*, etc., are ordered by the commanders of the larger units at the proper time. After the *general*, one or more officers of each organization superintend the preparations for the march. Troops do not start before the hour designated, but they should start promptly at that time; if the commander is not present, the officer next in rank puts them in march.

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

147. Rate and Length of Marches.—The rate of march of a mixed command is regulated by that of the foot troops. It varies with the

length of the march, size of the command, condition of the troops, and other circumstances; sandy, rough, muddy, or slippery roads, great heat and dust, strong headwinds, storms and broken country, reduce the rate. If hills are to be climbed or swampy country is to be crossed, or defiles passed, liberal allowances are made in time calculations.

For *infantry* the rate prescribed for drill is 100 yards a minute or 3.4 miles an hour; on the road the maximum to be counted on is 88 yards a minute or 3 miles an hour, including halts 2½ to 2¾ miles. The rate of infantry columns, under average conditions, may be assumed at 2¼ to 2½ miles an hour.

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

It is of great importance that a uniform rate of march be maintained throughout the column. The officer who sets the pace bears in mind that the troops in rear are at a disadvantage, and that an irregular pace fatigues the men and produces ill temper. When a change in the rate is to be made, warning is sent along the column.

For *cavalry* the rates prescribed for drill are:

The walk 4 miles, the trot 8 miles, and the gallop 12 miles an hour. The average walk of a horse is at the rate of a mile in 16 minutes or 3¾ miles an hour; the average trot, a mile in 8 minutes or 7½ miles an hour.

In the field the usual gait is the walk of 3¾ miles an hour, including halts 3¼ to 3½ miles an hour.

Under favorable conditions the walk and trot alternate, the rate being about 5 miles an hour after the first halt. The periods of trotting alternating with the walk should not, as a rule, exceed ten or fifteen minutes; too frequent changes are undesirable. When practicable, distances between units may be increased to enable advantage to be taken of level stretches of ground for trotting. As a rule, the first 2 and last 2 miles are made at an easy walk.

The average march of cavalry, after men and animals are hardened, is 25 miles a day.

The gait should be uniform and slow enough to enable all the horses to keep up without undue exertion. A fast walk at the head causes trotting in rear; a fast trot renders the gallop necessary.

This lack of uniformity is extremely fatiguing to both men and horses, and ruins cavalry commands even on ordinary marches.

The daily march of *field artillery* is the same as that of the command of which it forms a part; if alone it covers from 15 to 20 miles. The rate of horse artillery is the same as that of the cavalry to which it is attached.

The rate of a *wagon train* varies with the class and condition of the draft animals, the load, length of the column, and the condition of the roads. While large mules drawing light loads on good roads can cover nearly 4 miles an hour, in long columns a rate of 2 miles, including halts, is all that can be expected under even favorable conditions; small trains may make 2½ miles an hour. The daily march of a wagon train is about the same as that of infantry.

In ascending or descending steep slopes, and also as a measure of relief to the men in cold weather and when they are tired of riding, cavalrymen, artillerymen, and men riding on wagons who are able to walk, are required to dismount.

148. Halts.—To rest the men and animals, and for other purposes, a command on the march is occasionally halted. The first halt is made after marching about three-quarters of an hour, and is about fifteen minutes long to enable the men to attend to the calls of nature and to adjust their clothing, etc. Judgment should be exercised in selecting the place for the first halt; it should not be made in a village or place where one of the objects of the halt would be defeated.

After the first rest, there is for *foot troops* a halt of about ten minutes every hour—that is, the troops march fifty minutes and then halt ten. This is not a rigid rule, but is modified according to circumstances. In very hot weather, for example, the halts may be longer and more frequent. The men are allowed to fall out, but remain in the immediate vicinity of their places.

For *cavalry* the hourly halts are shorter—five minutes; the men examine the horses' feet, adjust saddles, etc.

For *artillery* the hourly halts are from five to ten minutes; harness is adjusted, girths are tightened, etc.

As a rule troops prefer to finish a day's march as soon as possible. In good weather, with favorable temperature, long halts are not desirable on marches of less than 15 miles for infantry or 25 miles for cavalry. When the day's march will run well into the after-

noon, a halt of about one hour near meal time is advantageous. Places for long halts should be selected with care; wood, water, grass, dry ground and shade are desirable features. Arms are stacked and equipments removed; mounted troops dismount and loosen cinchas.

In hot weather, especially in the tropics, it may be desirable to avoid the midday heat. If the march is long the command may make an earlier start, or it may rest for three or four hours during the hottest part of the day and finish the march in the evening. As a general proposition, however, it is undesirable to arrive at a strange place after night-fall or even late in the afternoon.

Halts are not made in or near towns or villages unless to procure water or supplies, and when so made, the men remain in column, details being sent for whatever is necessary. In commands not exceeding a regiment, and in wagon trains of less than a mile in length, the units may halt simultaneously, the signal from the head being promptly repeated. This may also be accomplished in longer columns by the commanders of units setting their watches at the same hour before starting, and agreeing when the halts shall be made; the units all halt and resume the march at the moments agreed upon.

149. Crossing Bridges, Fords, and other Obstacles.—When a cause of delay—for example, a damaged bridge—is encountered, the troops in rear are notified of the minimum length of the delay; they then conduct themselves as at regular halts.

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

Before attempting to cross with bodies of troops, careful examination is made of fords, boggy places, bridges of doubtful character, ice, etc., as the case may be.

When necessary, an officer is designated to superintend the crossing, his instructions must be strictly observed, the troops

crossing in formation prescribed by him. Foot troops crossing bridges march without cadence.

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

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

Fords that are at all difficult delay long columns unless the troops cross at several places at once. Additional fords should be sought despite the denial of their existence by the inhabitants. The crossing of many animals or wagons may deepen a ford and render it impassable; new places may thus become necessary.

The depth of a ford with rapid current should not exceed 4 feet for cavalry, 3 feet for infantry, and 2½ feet for artillery and wagons; in sluggish water these depths may be increased.

In crossing ice the formation of troops varies according to the thickness and solidity. Ice about 3 inches thick will support small groups of men; 4½ to 7 inches, cavalry, and light guns; 8 to 12 inches, heavy guns.

150. Crossing Streams on Ferries.—Persons operating the ferry are interfered with as little as possible.

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

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

Guns, caissons, and wagons are generally loaded by hand; if practicable, the teams are sent on the same vessel.

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

When *rafts* are used, special precautions are necessary. The center of the raft is first occupied and then the load uniformly dis-

tributed. Unloading is carried out in inverse order, the center of the load being last to leave.

The crossing of beef cattle on boats or rafts is dangerous. When practicable they are crossed by swimming.

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

Commanders of company units habitually march at the head of their commands, but go where their presence is required; they occasionally allow their commands to march past in order to observe the condition of the men. When more than one officer is present with a company unit, one of them marches at the rear.

In the cavalry constant vigilance is exercised to see that the men ride properly. Lounging in the saddle, and the spurring and fretting of horses to make them canter are promptly checked. If a horse apparently refuses to trot the rider may be required to fold his arms while the horse is led, or he may be changed to another horse, or moved to a place near the head of the troop.

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

Precaution is taken to prevent excess in eating and drinking. The drinking of water is often a matter of habit; under ordinary conditions a canteen of water should last one man a day's march. Soldiers should be trained to be economical in the use of water, and to keep a small supply until their canteens can be replenished. If water is plentiful they may drink often, but only a small quantity at a time.

Commanders afford the men ample opportunity for replenishing their canteens, but it is done by order, not by straggling from the command. In certain cases, the advance guard may require the inhabitants to place water in vessels along the line of march for the convenient use of troops. On long marches through country deficient in water, or where the water is bad, it may be necessary to carry a supply in wagons.

The watering of cavalry horses upon the march depends largely on the facilities available. In hot weather, or if nothing is known about the water supply of the day's march, the horses are watered before leaving camp. Good opportunities for watering on the road should not be neglected. To avoid delay, as many troops as

possible are watered at the same time; as the head of a command approaches a place suitable for watering, the several units are conducted, according to their position in column, to the different watering places.

Horses must be watered quietly and without confusion; the manner in which this duty is performed is a good test of the discipline of a mounted command, and of the efficiency of its officers.

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

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

When a band accompanies the troops it may, under favorable conditions, be required to play at long halts. While marching through towns the command may be called to attention and the band or field music required to play a march.

For the disposition of the sick and injured, see section 302.

152. Police.—A provost guard, under an officer, marches about 100 yards in rear of the troops. Its duty is to arrest stragglers and receive prisoners. If the command is smaller than a brigade, the commander of the rear company or troop details the guard; if the command is a brigade or larger, a provost marshal is appointed and furnished with a suitable force; he has charge of the police of the column, and of the camp after it is established.

No man leaves the ranks without permission; it is the duty of all officers and noncommissioned officers to prevent straggling. Enlisted men found away from their organizations without authority are arrested and turned over to the provost guard. Unless instructions are received to the contrary, military prisoners held by the guard are returned to their units at the first opportunity with a statement of the circumstances of their apprehension.

All persons found pillaging, marauding, or committing crimes are arrested and dealt with according to law.

153. Camp or Bivouac.—As a command approaches the camping place the commander issues the *halt order*. This order provides for the outpost, if necessary, and gives instruction for the encampment of the command. (Art. VI.)

Special regulations.

154. Though of general application, the foregoing rules must be modified according to the situation.

For convenience of reference and discussion, marches are classified as follows:

1. Marches in peace:
   - (1) Marches in changing station.
   - (2) Practice marches.
2. Marches in campaign:
   - (1) Concentration marches.
   - (2) Marches in the presence of the enemy.
   - (3) Forced marches.
   - (4) Night marches.

Marches in peace.[a]

155. Changing Station.—While all marches should be conducted with a view of instructing and preparing troops for actual war, marches in changing station are usually made with limited transportation, railroads being used for carrying supplies and for sending the sick to their stations. The location of camps and the length of the daily marches are therefore controlled, in a great measure by the railway facilities. When railroads are not available, supplies are carried by the regular transportation, or by wagons hired for the purpose.

The march order is a routine order, and is issued from day to day, or it may cover marches of several days. It prescribes the distribution of troops, time of starting, camping place, service calls, and such other details as the commander deems necessary.

To afford greater freedom of movement, the distances between the elements of a column may be materially increased. In hot weather, or on dusty roads, the commands may thus be divided into fractions of company units.

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[a] These principles are applicable in time of war to troops not in the theater of operations.

In wet weather, to avoid cutting up the road in advance, mounted troops of small mixed commands may follow the infantry; in going through high vegetation or snow, they may lead to break the way.

Field trains may follow immediately in rear of their regiments, and the supply trains be placed to facilitate issues.

At the end of a day's march camps may be established along the road, due regard being paid to facilities for wood and water. Lateral movements are thus avoided, and the elements can resume the march almost simultaneously.

156. Practice Marches.—The practical training of troops is divided into two phases, namely, *garrison training* and *field training*. Practice marches form a part of field training and are made with two objects in view: (1) That of hardening the men and animals and of keeping them in proper physical condition; (2) that of instructing officers and men in duties incident to a campaign—marching, camping, cooking, etc.—and the principles of tactics, including the services of information and security.

A practice march conforms to the conditions it is intended to simulate. The troops at times carry the full field equipment. It should be borne in mind that practice marches, like all physical exercise or recreation, should never be carried to the degree of physical exhaustion, and should, as a rule, stop short of excessive physical fatigue. They should not be made under conditions of great heat or cold, or excessive wet weather, which would defeat the very object for which they are made.

The transportation, personal baggage of officers, tentage, etc., conform strictly to the regulation allowance.

That the maximum benefit may be obtained, practice marches should always include instruction in field duties of some character. They can thus be made of interest to the men and will not be regarded as a needless hardship. In maneuvers, and in exercises where the presence of the enemy is assumed, regular field orders are issued.

Marches in campaign.

157. Concentration.—Marches of concentration are made for the purpose of assembling at a certain time and place bodies of troops from different localities. Such marches require an accurate computation of the time required for marching, and of the road space

occupied by the troops. The condition of the roads, weather, etc., must be considered.

A column of troops on the march should not be cut by another. If the heads of two columns meet at a distance from the enemy, the senior commander has the right of way; if near the enemy, the senior determines what measures are to be taken.

If a column in march overtakes another at a halt, it may pass on, provided its commander be the senior, or the other commander gives his consent. In either case the column which advances first is accompanied by its combat train; the field train waits for the other column with its combat train to pass, but precedes the field train of the latter column.

158. Marches in the Presence of the Enemy.—*Security* is afforded in part by the independent cavalry, but principally by the advance, rear, and flank guards, as the case may be. The *order of march* of these bodies is controlled by tactical considerations.

The order of march of the *main body* is determined by the contemplated employment of the troops. When contact with the enemy is probable, columns are closed up and march on broad fronts; communication is maintained between the columns on parallel roads, and all impedimenta not necessary in the conflict is kept in rear. If a part of a unit of infantry is assigned to the advance guard, the remainder of that unit usually marches at the head of the main body.

During the advance, the *artillery*, in order to expedite its entry into action, is generally near the head of the main body, sufficient infantry leading to insure proper security. Its commander usually accompanies the commander of the column. If there is danger to the flanks from small bodies of the enemy, the artillery may be broken into columns not longer than a regiment; it then marches like a convoy with infantry in front, in or opposite the center, and at the rear. This formation of necessity delays the entry into action of a part of the infantry; to reduce this delay, the artillery marches, if possible, in double column, and its combat train follows immediately in rear of the last infantry unit. When moving into action the artillery has the right of way.

Thus, in the *march of a division*, assuming the advance guard to consist of two regiments of infantry, all of the divisional cavalry, one battalion of artillery, one company of engineers, and a detach-

ment of sanitary troops, the distribution of the main body and trains *might* be made as follows:

2 battalions infantry.
1 battalion artillery.
1 battalion infantry.
Regiment artillery.
2 brigades infantry.
Artillery combat train.
Engineers.
Signal troops.
Sanitary troops.
Field train.
Ammunition train.
Pack train.
Supply train.

On marches through long defiles, or dense forests, or on night marches, it may be advisable to place the artillery near the rear of the column.

159. Trains.—In marches into action the trains are held far enough in rear not to interfere with movements of the troops, or check withdrawal in case of defeat. The ammunition trains and sanitary troops are assigned suitable stations, depending upon the course of events.

If a bridge train is attached to the division and is to be used during the day's march, it is assigned a place in column as far forward as practicable; if it is not to be used, it marches with the supply train.

If there can be no contact with the enemy during the day and road space is of little importance, the regimental field trains may follow immediately in rear of their regiments, or they may be consolidated by brigade and follow their respective brigades. When contact with the enemy is probable, or road space is important, the field trains are consolidated and march at such distances in rear of the division as the division commander deems best, and may be united with the supply train.

If the rear is in danger of being attacked, the rear guard follows the field train and sanitary troops and a special guard is assigned to convoy the ammunition, supply trains and pack trains; or all these trains may be consolidated and the rear guard follow the entire column.

When an action begins the provost guards, and the rear guard unless otherwise ordered, hasten to join their commands. Men who have been arrested are taken along into the fight.

In commands smaller than a division the field, supply, ammunition, and pack trains may all be consolidated, the field train usually leading.

If a wagon breaks down or is stalled, its load is transferred to other wagons and the road cleared as soon as practicable. The officer in charge of the train sees that the headquarters baggage and telegraph material are not delayed.

In the march on a single road of *two or more divisions*, each division is followed by its sanitary troops and generally by its trains. When combat is probable or concentration important, the field and supply trains may all or in part be consolidated in rear of the last division.

The heavy artillery, bridge train, balloon train, etc., of a field army march in rear (auxiliary division) and are ordered to the front as circumstances require.

160. Forced Marches.—The *conduct* of forced marches is controlled by the distance to be covered and the time in which the march is to be accomplished. As they seriously impair the fighting power of even the best troops, forced marches are undertaken only in cases of necessity. Long forced marches can not be made without injury unless the command is in good condition and the march is made with good judgment. The difficulties of the problem rapidly increase with the size of the command and length of the march, but in any case the completion of the march should find the troops in condition to accomplish the object of the march.

With *foot troops* forced marches are generally made by increasing the number of marching hours, the halts and periods for cooking and sleep being arranged so as to afford the maximum benefit. The rules prescribed for the average march are followed as closely as possible. For large columns of infantry marching long distances, increase of pace is seldom of value.

A maximum day's march for infantry and trains is about 28 to 30 miles. A march of this character can not, as a rule, be prolonged more than thirty-six hours. If a forced march is to continue for several days, it becomes practically a succession of daily marches of more than average length.

Foot troops are favored in every way possible. They are assigned the best roads, and not intermingled with vehicles or mounted men. If transportation is available, their packs are lightened.

With *mounted troops* the gait as well as the number of marching hours may be increased.

Under favorable conditions of road and weather a rate of 50 miles in twenty-four hours can be maintained for three or four days. On such marches the usual hourly halts are made; in addition, a halt of two hours is made at the end of the first half of each day's march, during which the horses are unsaddled and permitted to roll, feed, and lie down. The rate is about 5 miles an hour, excluding halts.

Under very favorable conditions a single march of 100 miles can be made in from twenty-four to thirty hours. On such a march the usual hourly halts are made; in addition halts of two hours are made at the end of the first and second thirds of the march, during which the horses are unsaddled and permitted to roll, feed, and lie down. The rate is about $5\frac{1}{2}$ miles an hour, excluding halts.

For distances from 30 to 40 miles a rate of 6 miles an hour, excluding halts, can be maintained under favorable conditions of road and weather. If the command be small, well seasoned, and lightly equipped, the rate may be even greater. The usual halts are made.

If the distance to be covered by forced marches is about 150 miles, the march begins at a rate of not more than 50 miles a day. For distances greater than 200 miles the daily march is from 30 to 40 miles a day.

On forced marches where the road is level or nearly so and the footing good, the men are occasionally required to dismount and march for short distances at a fast walk or slow double time, leading their horses. They are also permitted to loosen or remove their blouses and overcoats if their comfort will be materially increased thereby.

161. Night Marches.—Night marches are sometimes made in hot weather to avoid the heat of the day; generally, however, they are made as the result of a forced march to surprise the enemy or to secure a favorable position from which he may be attacked at night or at dawn.

Moonlight and good roads are favorable for night marches. A waning moon is of advantage in marches beginning early in the morning. As all-night marches rapidly impair the efficiency of a command, a few hours' rest should be taken if practicable. Special effort is made to maintain good order and to keep the men awake.

Precaution is taken that the proper road is followed and that contact between the units is maintained, men being stationed to

mark changes of direction. If necessary, guides are secured and charged with the duty of following the right road. In passing through a town lights may be placed in the windows or lanterns hung along the streets. In wagon trains lanterns may have to be lighted; drivers may be required to walk to keep them awake.

When the march is secret, additional precautions are necessary. Silence is maintained; mouthpieces of bugles are removed, and articles of equipment secured to prevent rattling; smoking is not permitted; villages and farmhouses are avoided on account of warning given by dogs. If the troops are compelled to leave the roads, their progress will be slow, and additional time allowance must be made.

Heavy fogs, severe storms, or blizzards may bring about conditions similar to those making night marches difficult.

If cavalry forms a part of the column at night, it ordinarily marches in rear of the infantry; if there is artillery, it generally follows the cavalry and has a special infantry escort.

CONVOYS.

162. A convoy is a vessel or fleet or train of vehicles or animals employed in the transportation of military supplies, and generally having an armed escort.

On land the term "convoy" is usually applied to those trains by which supplies are forwarded to an army from depots or magazines in rear, and to trains bringing in supplies collected by requisition. The trains directly attached to a military force are generally sufficiently protected by the presence of troops and by train guards.

163. In the field the *typical convoy* is one of wagons drawn by animals, but the general principles governing the march and security of such a convoy apply to other kinds of transportation and to mixed convoys.

WAGON CONVOYS.

164. As the difficulty of controlling and protecting a convoy increases rapidly with its length, it should not, as a rule, contain more than 100 wagons. Such a train occupies about 1 mile of road space.

A staff officer, generally a quartermaster, with such assistants as may be available, is placed in charge of the transportation. He divides the train into sections of twenty to thirty wagons and places

a noncommissioned officer or wagon master in charge of each section. The organization of each section is similar to that of the prescribed *wagon company*.

A police guard of at least one squad is assigned to each section to preserve order, protect property, render assistance in case of accidents, and take part in the defense. With hired or impressed transportation a stronger guard is required.

Frequent inspections and constant attention are necessary to maintain efficiency throughout the convoy.

165. A convoy *marches* with a distance of about 25 yards between sections, about 2 yards between wagons, and at a rate of 2 to 2½ miles an hour, including halts. The march is similar to that of a body of troops, except for breathing spells in ascending long slopes, and delays to lock wheels on steep descents. Long halts are avoided. The slowest teams are placed in the lead. The field train of the escort marches as a part of the convoy train.

Care is taken that the wagons are not overloaded, and that unauthorized articles are not carried. Broken wagons are removed from the road, their loads being transferred to spare wagons or distributed among other wagons of the train.

166. Security.—Security for a convoy is furnished by the escort, which, as a rule, is composed of infantry, with enough cavalry for scouting and communication, and some engineers. The proportion of cavalry varies, being greater in open than in close country.

The strength of the escort depends upon the importance and size of the train, the risk, nature of the country, length of the journey, etc. A train containing explosives requires a strong escort in order to keep the enemy from firing into it. Under average conditions a train of 100 wagons requires an escort of one battalion of infantry and one troop.

The senior line officer on duty with the troops, commands the convoy. He consults with the officer in charge of the transportation, and, if practicable, defers to the latter's wishes as to the hours of starting, length of marches, parking of the train, police guards, etc. Officers casually with a convoy exercise no authority therein.

167. Distribution of Troops.—When a convoy is to march, the commander assigns police guards to the different sections, and distributes the remainder of the escort as follows:

Advance guard.
Main body.
Flank guard (if necessary).
Rear guard.

168. Advance Guard.—The *advance cavalry* precedes the train 3 to 5 miles, scouting to the front and flanks. It is accompanied by the necessary guides and interpreters. Careful examination is made of bridges and defiles, and of the country in the vicinity; temporary guards are left at such points until the support comes up.

The remainder of the advance guard marches about a mile in front of the train.

The advance guard commander examines the country with a view of selecting suitable places for halting or parking the convoy, should the enemy be encountered.

The head of the train is never permitted to enter a defile until the advance guard is in possession of the farther end.

169. Main Body.—The main body marches at the most important point, which may be near the head, in rear, or opposite the center of the train, the latter being the usual position. If the main body marches opposite the center it is generally advisable to place a section of infantry at the head and another at the tail of the train for its immediate protection.

170. Rear Guard.—The rear guard marches a short distance in rear of the train, with the usual rear guard formation. Its strength is ordinarily about one-sixth of the escort.

Camping.

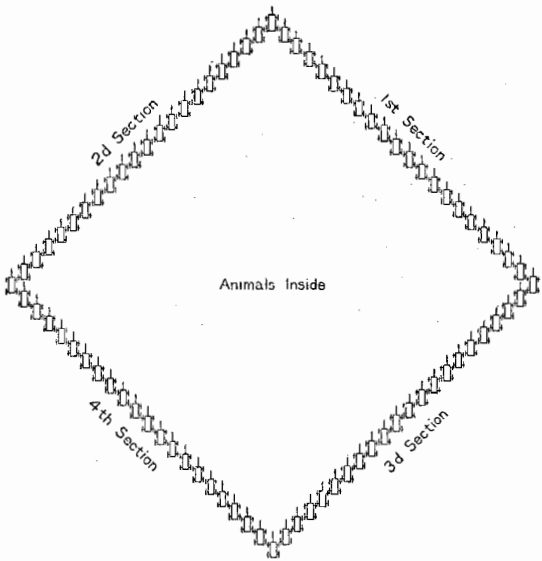
171. The place for camping is usually selected by the advance guard commander, due regard being paid to the water supply, fuel, grass, and facilities for defense. The vicinity of towns or villages is generally undesirable. A field inclosed by wire fence is advantageous.

Herding should not be undertaken unless there is little danger from attack, or lack of forage demands it.

On going into camp or during long halts, the train is parked, the formation depending upon the proximity and character of the enemy and the amount of ground available.

When the enemy is known to be *distant* the train is usually parked in column of sections or half sections, with distances of about 20 yards between subdivisions, and intervals of 6 to 8 yards between wagons. A compact formation is secured by placing the wagons axle to axle and tying the animals to picket lines in front of the wagons.

For purposes of *defense* wagons may be placed in two lines facing each other, or in the form of a square, rectangle, oval or circle, the poles inside; the inclosure thus formed furnishes shelter for the



CONVOYS

FORMATION OF DIAMOND-SHAPED CORRAL

SCALE: 1 INCH=120 FEET

men and animals. When there is time, wire entanglements are constructed and shelter trenches dug outside the corral.

A diamond shaped corral as shown in diagram, is recommended for emergencies, as it can be rapidly formed and the march quickly

resumed. The animals of the first two sections are unhitched and placed inside; openings are left where necessary. If the nature of the ground permits, the teams of the first two sections may countermarch before forming the corral, thus obviating the necessity of unhitching.

The camp is protected by the necessary outposts.

172. Defense of a Convoy.—The chief duty of the escort is to keep the enemy from gaining a position permitting effective fire on the train. With efficient security a convoy can not be surprised.

The flanks of a convoy are its most vulnerable parts. If the enemy is reported near, the wagons are closed up and the march is continued in the most orderly manner possible; if practicable, the wagons are formed in double column.

The escort fights only when necessary, and does not pursue when the enemy is repulsed. If the enemy holds a commanding position or a defile on the line of march, he is either dislodged by the escort or the convoy takes another road.

The advance cavalry reports the presence of the enemy with the utmost dispatch so that the commander may change the direction of march, park the train, or, if necessary, begin a retreat.

If menaced by small parties of the enemy, a convoy continues its march under protection of the escort; if attacked by a superior force, the train is parked or a corral formed, skirmishers being thrown out to delay the enemy and gain time for the formation. The commander selects good defensive positions at some distance from the train, intrenches if possible, and prepares for a stubborn resistance. Couriers are dispatched to apprise the nearest troops of the situation. Should the enemy be repulsed, his retreat is carefully verified before the march is resumed.

If it is evident that the train can not be saved, the commander endeavors to escape with the most valuable part, the remainder being set on fire or otherwise destroyed.

173. Attack of a Convoy.—The most favorable time for attacking a convoy is when it is passing through woods, a defile, or over a bridge; when it is going around a sharp bend in the road; when ascending or descending difficult slopes or passing over bad sections of the road; when the convoy is beginning to form a corral; when the teams are being watered; or, generally, whenever the conditions are such that the escort can not quickly prepare for defense.

The attacking force endeavors to bring the convoy to a halt, and to throw it into confusion by making an attack from an unexpected

quarter. The fire of artillery and of machine guns is very effective. If a convoy is captured, the parts that can not be carried off are destroyed.

Convoys of prisoners.

174. In addition to an escort to repel attempts at rescue, a guard of about 10 foot-soldiers and several mounted men is required for every 100 prisoners. The captives are formed into companies and marched in column, their officers marching separately. Prisoners are treated kindly, but must be given to understand that any attempt to escape will draw fire. If the convoy is attacked, they are ordered to lie down. At night they are placed in suitable well-lighted buildings or inclosures.

Convoys by rail.

175. When the protection afforded by the troops guarding the line of communications is not sufficient, the train to be convoyed is preceded by a pioneer train carrying a working party and a portion of the escort. The working party is provided with tools and supplies for making repairs. The locomotive is armored if practicable, and the cars carrying the escort and working party are protected by shields of boiler iron or by sand bags. The train to be guarded follows at a distance of 1 or 2 miles with the remainder of the escort suitably placed on armored or protected cars.

Convoys by water.

176. On interior lines of communication, water transportation derives its security principally from the presence of troops in the field. For protection against guerillas and raiding parties, a shallow draft steamboat, provided with machine guns and shelter against rifle fire, carries part of the escort and precedes the transports. Means for rapidly disembarking the escort are provided in order that hostile parties on shore may be quickly dislodged. In the case of narrow streams or canals lined with woods or other cover, it may be necessary to have the escort march on both banks and clear the country as it advances.

At sea, on the Great Lakes, and on large rivers, inlets, and estuaries, convoy escort duty is performed by the navy in accordance

with the following rules prepared by the joint board and published in General Orders 174, War Department, 1906:

"1. All matters relating to the purchase, charter, fitting out, equipping, and maintenance of transports, engaging their officers and crews and providing rules for their government, their interior discipline and administration, shall be controlled by the army.

"2. If practicable, all transports carrying troops or animals shall be supplied with distilling apparatus adequate for the supply of water required. As a reserve in case of emergency, a distilling ship, furnished by the navy, shall, if practicable, accompany each convoy.

"3. All matters relating to the loading of the transports with troops, animals, or stores, and the quota or cargo to be assigned each vessel will be under the charge of the army.

"(*a*) The discharging of troops, animals, and stores from the transports into the boats will be under charge of the army, and their transfer in boats to the shore will be under charge of the navy, at such time and in such order as the army commander directs.

"4. An expedition over-sea which requires naval convoy being decided upon, as soon as the transports begin to assemble at the rendezvous, a naval officer of suitable rank shall be appointed as convoy commander, and be supplied with information concerning the strength of the expedition and its proposed objective.

"(*a*) He shall be given by the army authorities facilities for inspecting the transports as they assemble for the purpose of ascertaining if they are properly fitted with ground tackle, boats, lines, and all equipment necessary for the proper management and control of the convoy while in transit and while disembarking men and animals under the conditions which will probably be met. Deficiencies in this direction shall be by him called to the attention of the proper army authorities.

"(*b*) In case of a failure to remedy such deficiencies, if in his opinion such neglect would threaten the safety of the convoy or the success of the expedition, he shall certify the fact to the army commanding officer, who, if in his judgment it is impracticable to remedy such deficiencies, shall so inform the naval convoy commander in writing.

"5. A naval lieutenant and a junior or warrant officer and four quartermasters or signalmen for each transport and supply vessel under convoy shall be supplied by the Navy Department and shall

be detailed by the naval convoy commander to the vessels when they are ready to proceed to the anchorage determined upon as the final rendezvous for departure. Means of making flag, hand semaphore, and wigwag signals by day and night shall also be provided by the Navy Department.

"6. The orders as to the destination of convoy and time of sailing shall be issued by the army commanding officer under the authority of the War Department and communicated to the naval convoy commander. Should circumstances arise after sailing which render a change in plan or destination necessary or desirable, which change is not practicable to refer to higher authority, the army commander shall, after consultation with the naval convoy commander, decide as to such change.

"(*a*) The naval convoy commander shall have control of all movements of the convoy and shall establish all orders of sailing and formation. He shall make provision for emergencies, such as an attack by an enemy or dispersion of the convoy by weather or other circumstances.

"(*b*) He will make his subordinates, placed on the transports and supply vessels, familiar with his dispositions and plans.

"(*c*) Should the transports be separated from the convoying vessels by accident or design, the senior naval officer present and on duty will take charge of the convoy and control its movements in accordance with the plans of the convoy commander.

"7. The senior naval officer attached to a transport or supply vessel shall, under the authority of the naval convoy commander, and in obedience to his orders and signals, control entirely the movements of the vessel in which he is embarked, including her anchorage.

"(*a*) He shall have no other authority on board. The master and officers of the vessel shall perform their navigation duties affecting her speed and movement under his direction, and should there be any opposition to or interference with his authority in any way he shall call upon the commanding officer of the troops on board, who shall take such steps with the force under his command as may be necessary to enforce the authority of the naval officer attached to the vessel.

"8. The plans of landing will be decided upon by the army officer commanding, who will consult with the naval convoy commander as to naval assistance, such as the covering and protection

of the landing by the artillery of the men-of-war, and use of naval boats. This assistance the naval convoy commander will render to the fullest extent practicable and with the sole object in view of assisting to the utmost the plan of campaign of the army commanding officer. After the order of landing is made known to him, the naval convoy commander will, in accordance therewith, control the placing of the transports and supply vessels for disembarking their troops, animals, munitions, and stores, and will control their withdrawal when discharged to the harbor or anchorage selected.

"9. It is deemed desirable that the army commanding officer shall, if convenient, be embarked in the flagship of the naval convoy commander. If not convenient, the army commanding officer's transport should be out of the formation and near the flagship of the naval convoy commander, in order that communication between them may be readily had at any time, and in this case the senior naval officer assigned to transports should be embarked in the same transport as the army commanding officer.

"Any existing regulations or orders in conflict or at variance with any of the foregoing rules are, to the extent of such conflict, revoked or modified in accordance therewith."

ARTICLE VI.

SHELTER.

GENERAL PRINCIPLES.

177. To maintain the efficiency of a command, the troops *must have adequate shelter.*

178. *In time of peace* troops in the field are generally sheltered under canvas. On marches, they usually put up tents after each day's march. In local insurrections, riot or disorder, *public* buildings in the disturbed district may be used for sheltering the troops engaged in quelling the disturbance when other shelter is not provided. *Private* buildings are not entered without the owner's consent, except in the performance of duty.

179. *In time of war* temporary use may be made of public buildings in our own country when absolutely necessary, for example, in the care of the sick and wounded; but as long as communities or individuals offer the use of buildings, or they can be rented at reasonable rates, seizure is not resorted to unless the emergency is imperative. In *enemy territory* public and private buildings may be used to shelter troops and for other military purposes; but for sanitary reasons troops are seldom quartered in private buildings unless their own tentage is inadequate. When public or private buildings are to be taken for shelter, the civil authorities should be consulted and satisfactory arrangements made. Families are not removed from their dwellings if it can be avoided, nor deprived of bed rooms or kitchens.

180. When troops are sheltered under canvas they are in *camp.*

When resting on the ground without shelter they are in *bivouac.*

When occupying buildings in towns or villages, or huts specially erected, they are in *cantonment.*

Cantonments often develop through improvement of camps—huts or temporary buildings taking the place of worn-out tents. During a prolonged suspension of hostilities, the occupation of enemy territory, and at sieges, cantonments are advantageous, especially in cold or wet weather.

Billeting is the assignment of troops to public or private buildings for quarters.[a]

181. The allowance of tentage is regulated in orders from the War Department. In permanent camps the men are generally sheltered in pyramid or equivalent tents at the rate of eight or ten to a tent. Wall tents are provided for officers, storage tents for quartermaster and commissary supplies, and hospital tents for the hospitals. In campaign the tentage is reduced to actual necessities, depending upon the nature of the operations and amount of available transportation. As a rule the men are provided with shelter tents only, the officers with wall tents or shelter tents; the field hospitals provide tents for the sick.

On practice marches and at maneuvers, the character of the shelter depends upon the conditions which the exercises are intended to simulate, and is regulated by the commander.

SHELTER DURING MOBILIZATION.

182. When troops are mobilized they are assembled at convenient places previously selected by the War Department, and formed into brigades, divisions, etc. On arrival they are sheltered under canvas or in temporary barracks, and proper provision is made for their health, comfort, and instruction. As a rule, such camps or cantonments are not large and should fulfill the following conditions:

1. The grounds should be easily drained, naturally healthful, and large enough for depots, corrals, hospitals, etc., and the encampment of the troops without crowding, and with ample space for exercise and instruction.

2. The water supply should be excellent and abundant, and not liable to contamination from any source.

3. There should be ample railroad and switching facilities, and suitable arrangements for loading and unloading.

4. All parts of the camp should be readily accessible by good wagon roads.

All arrangements for the accommodation of the troops should be completed before their arrival. Camps are laid out so as to preserve the integrity of the administrative units, the headquarters of

[a] No soldier shall, in time of peace, be quartered in any house without the consent of the owner; nor in time of war, but in a manner to be prescribed by law. (Constitution, 3d amendment.)

each being centrally or conveniently located with respect to its troops; tents are pitched and aligned, kitchens equipped, water and fuel supply arranged, cots provided, latrines prepared, hospitals erected, and arrangements made for ample mail, telegraph, and telephone service. The general headquarters should be centrally located and connected by wire with the principal subordinate headquarters. Depots and storehouses are placed at railroad sidings, and the hospitals near the railroad station. Cavalry and artillery are generally at a greater distance from the general headquarters than the infantry; corrals, wagons, and pack trains are placed so as to interfere as little as possible with the comfort and cleanliness of the troops. No part of the camp should be more than 5 miles from the depot. As a rule the field hospitals are not set up until the troops take the field, but their personnel may be employed in the local hospitals.

Staff officers meet the troops at the station and personally conduct them to quarters.

SHELTER IN CAMPAIGN.

183. At the beginning of operations, the troops are drawn from the mobilization camps and assembled into an army or armies. Tactical considerations now demand greater concentration, and generally control the location of the camps as well as the nature of the shelter provided. So far as practicable the troops are sheltered in the tents forming part of their equipment, but the character of the shelter varies according to the situation. If shelter tents are used, additional shelter may be improvised, depending upon the situation.

On the march—Camps.

184. On marches troops are sheltered under canvas or bivouacked; in enemy territory they may be billeted.

185. Selection of Site.—There is often little choice in the selection of camp sites in war. When battle is impending, troops may have to camp many nights on objectionable ground. Nevertheless, sanitary considerations are given all the weight possible, consistent with the tactical requirements.

When tactical questions are not involved, and especially when the camp is to be occupied for some time, great care is exercised in selecting the site. Through no fault of their own, troops occupying an unsanitary site may suffer greater losses than in the battles

of a long campaign. *When practicable, a medical officer assists in the selection of camp sites.*

The selection of camp sites is governed by the following conditions:

1. The ground should accommodate the command without crowding, be easily drained, and have no stagnant water within 300 yards.

2. The water supply should be abundant, pure, and easily accessible.

3. There should be good roads to the camp and good interior communication. On account of dust and noise it is not desirable to place a camp on or near a main road.

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

Closely cropped turf with sandy or gravelly subsoil is best; high banks of rivers are generally suitable, provided no marshes are near.

In hot summer months the ground should be high, free from underbrush, and moderately shaded with trees if possible.

In cold weather ground sloping to the south, with woods to break the north winds, is desirable.

Old camp grounds and the vicinity of cemeteries are undesirable. Marshy grounds and stagnant water are objectionable on account of the damp atmosphere and the annoyance and infection from mosquitoes. Ground near the foot of a hill range generally has a damp subsoil and remains muddy for a long time. Thick forests, dense vegetation, made ground, alluvial soil, punch-bowl depressions, inclosed ravines, and dry beds of streams are unfavorable.

Camp sites should be selected so that troops of one unit need not pass through the camp grounds of another.

When practicable, camp sites are changed every two or three weeks. This is a protection against epidemics and affords change of scene. If the ground becomes cut up or dusty, or supplies grow scarce, a change is desirable.

186. Form and Dimensions of Camps.—Forms of camps are prescribed to facilitate the prompt encampment of troops after a march, prevent confusion, and secure proper camp sanitation. These forms, however, must often be modified, depending upon the military situation and the nature of the ground where the camp is located.

When practicable, battalions and squadrons usually camp in *column of company units*, as shown in the diagrams. This is

the normal formation, changes being made by the commander as circumstances require.

If *wall tents* are used for the men, the tents of companies are usually pitched in two lines 15 or 20 yards apart, facing each other; the tents of troops and batteries are pitched in one or two lines. If *shelter tents* are used, they are usually pitched in two lines facing each other, or in a single line facing the head of the column.

In laying out a camp the picket lines of troops are placed about 40 yards apart; those of batteries about 100 yards apart. With ample ground the picket lines may be placed on the flank beyond the latrines.

On marches from day to day the battery picket lines may be run through the rear wheels of the carriages, thus greatly reducing the size of the camp and economizing labor.

A normal regimental camp is a column of battalion camps. The tent of the colonel is 10 yards in rear of the line of the battalion field and staff, as shown in diagram. The tent of the lieutenant-colonel is on the right, that of the adjutant on the left of the colonel's tent. The tents of the other staff officers are on the left of the adjutant's tent. The noncommissioned staff, band, hospital, etc., are placed approximately as shown in the diagram for the camp of a regiment of infantry. Animals of the sanitary troops are tied to the train picket line. When the camp is for one or two nights only the field wagons may be placed on the flanks of the companies. When shelter for company messes is provided, it is placed in line with the company tents, between the first sergeant's tent and cooks' fires, this interval being increased by 15 yards for that purpose.

In the encampment of large commands the integrity of the various units is maintained so far as practicable, the headquarters being centrally located. Hospitals are set up only when necessary (sec. 301). The ammunition and supply trains follow the principles laid down for the camping of convoys.[a]

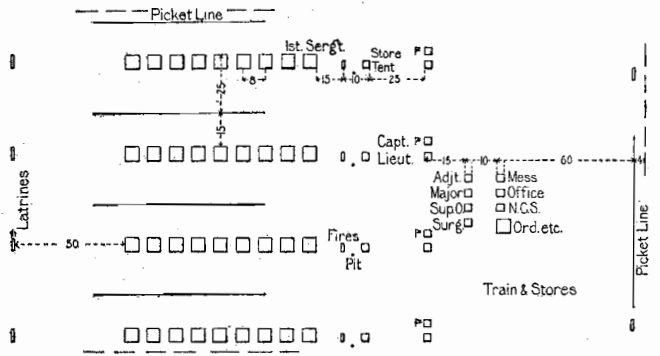
187. Establishing the Camp.—Camp is established pursuant to the *halt order*. This order provides for the outpost, if necessary, and gives instructions for the encampment of the main body. A place of assembly for the sick unable to continue the march is generally designated. When practicable, large commands are encamped by brigades.

The camping ground may be selected by the supreme commander, but in large commands is generally chosen by a staff officer

[a] For dimensions of camps see Appendix E.

sent forward for that purpose. This officer, with a representative from each brigade and regiment and a medical officer, precedes the command by three or four hours, selects the camping ground, assigns *sections* thereof to the larger fractions of the command, and causes them to be conducted to their respective sections on arrival. He also designates the place for obtaining drinking and cooking water, for watering animals, for bathing and for washing clothing, in the order named from up stream down.

CAMP OF A SQUADRON OF CAVALRY

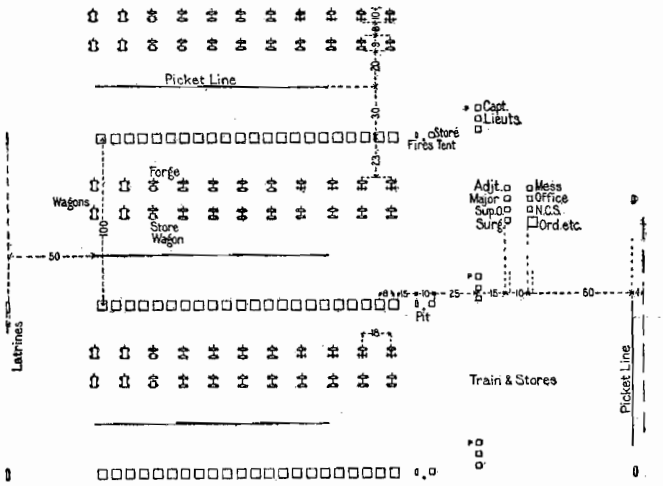


Distances in yards. Dimensions of Camp 150 × 260 yards. For 65 men to the troop.
The horses of the commander and staff may be tied to the troop picket lines.

On the arrival of the troops, guards are posted to enforce proper use of the water supply; the provost or camp guard proceeds to its place, and after posting sentinels, pitches its own tents; the infantry stack arms and remove equipments; mounted troops remove equipments and tie the animals to picket lines; tents are pitched as prescribed in Drill Regulations; kitchens are established and details made to procure fuel, water, forage, etc., and to prepare latrines and kitchen pits; if necessary, tents, company streets, and picket

lines are ditched. If not otherwise disposed of in the halt order, the field trains join their organizations. If the wagons do not arrive, or the troops are not supplied with regular tentage, they use their shelter tents or bivouac.

CAMP OF A BATTALION OF ARTILLERY

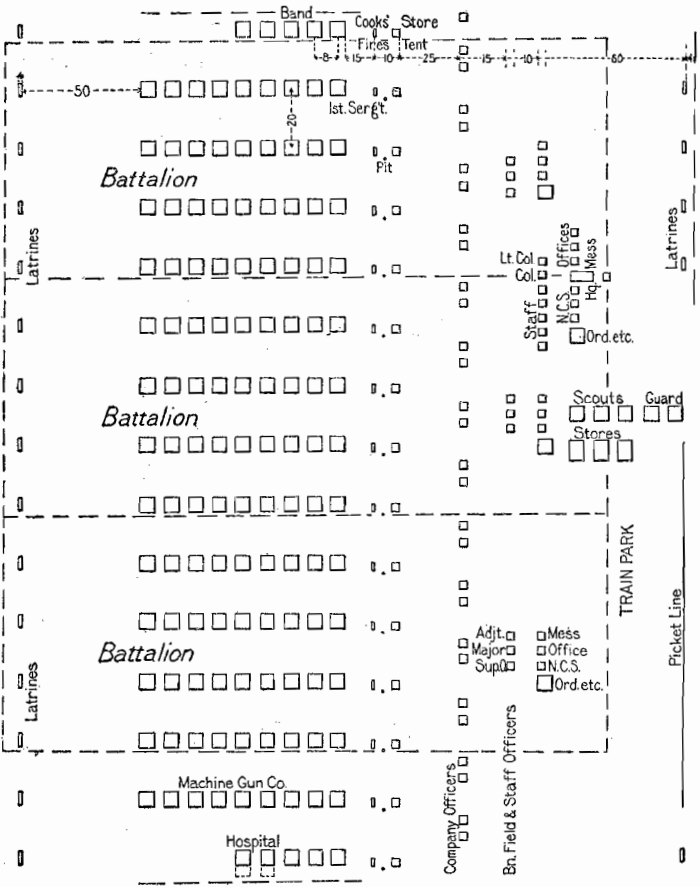


Distances in yards. Dimensions of Camp 280×370 yards. War strength.
As a rule the horses of the commander and staff are tied to the battery picket lines.

In the presence of the enemy, places of assembly for the troops are designated, and directions given for their conduct in case of attack. Lines of information and of communication are established with the outpost.

188. Billeting.—When troops are to be billeted, a staff officer and a representative from each brigade and regiment precede the

CAMP OF A REGIMENT OF INFANTRY



Distances in yards. Dimensions of Camp 300 × 260 yards.
For 65 men to the company. Each additional tent per company increases the width of the Camp 8 yards.

column. The staff officer confers with the civil authorities if present, makes an equitable division of the available quarters into distinct sections, and assigns a section to each regimental representative; the latter distributes the quarters to the troops of his regiment and conducts them to their places on arrival.

Unless the force is small, shelter of this character is usually inadequate, and some of the troops must use shelter tents or bivouac. However, villages and large farms often afford facilities such as wells and cisterns, bakeries, blacksmith shops, material for repairs, fuel and forage, which contribute to the comfort of the troops; it is therefore advantageous to camp or bivouac in or near them.

189. Bivouacs.—On marches troops are sometimes forced to bivouac on account of lack of ground; for example, in marshy country or jungles they may be forced to bivouac on the road. On the other hand, in fine weather in midsummer, or in the dry season in the Tropics, the troops may bivouac from choice.

From the tactical point of view bivouacs are very convenient, but for sanitary reasons they are resorted to, as a rule, only when other shelter can not be provided. The general principles governing the selection of camp sites apply to bivouacs. The ground should be dry and protected against sun and wind. Light woods are nearly always good sites for infantry bivouacs on account of the shelter and material available.

In the artillery on marches from day to day the men may be permitted to sleep under the carriages, or paulins covering the harness, thus obviating the necessity of pitching tents.

190. Care of Troops.—*Lack of sufficient rest* not only renders troops unfit for hard work, but diminishes their power of resisting disease. It is therefore the duty of commanders to secure for the troops, so far as practicable, their accustomed nightly rest; unnecessary night marches are avoided, alarms in camp and dissipation are prevented, and troops on night duty are permitted to make up loss of sleep.

The rules of sanitation are rigidly enforced according to the situation.

Men should not lie on damp ground. In temporary camps and in bivouac they raise their beds if suitable material such as straw, leaves, or boughs can be obtained, or use their ponchos or slickers. In cold weather, and when fuel is plentiful, the ground may be warmed by fires, the men making their beds after raking away the ashes. In permanent camps cots or bunks are provided.

When troops are to remain in camp for some time, all underbrush is cleared away, and the camp made as comfortable as possible.

Rough chairs, benches, tables, bake ovens, filters, walks, shade over mess tables, bathing and washing places, and windbreaks are camping expedients readily constructed. Watering troughs, shelter in cold weather and shade in hot, are provided for the animals if practicable. In winter quarters tents may be pitched on frames, floors laid, and bunks constructed; brick or stone foundations may be built for tent stoves.

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

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

Tent walls are raised and the bedding and clothing aired daily, weather permitting. When tent floors rest on the ground, they are frequently raised to permit a free circulation of air, and occasionally the tents are shifted to new ground.

Arms and personal equipments are kept in the tents of the men. In the cavalry, horse equipments are also usually kept in the tents, but in camps of some duration they may be placed on racks outside and covered with slickers. In the artillery, horse equipments and harness are placed on the poles of the carriages and covered with paulins.

The water supply is carefully guarded. When several commands are encamped along the same stream this matter is regulated by the senior officer.

If the stream is small the water supply may be increased by building dams. Small springs may be dug out and lined with stone, brick, or empty barrels. Surface drainage is kept off by a curb of clay.

When there is doubt as to the purity of the water, it is boiled twenty minutes, then cooled and aerated. A company requires at least two barrels of drinking water daily. When water is to be boiled, one man is specially detailed in each company to attend to the water supply.

Latrines for the men are always located on the opposite side of the camp from the kitchens, as shown in the diagrams—generally one for each company unit and one for the officers of a battalion or squadron. They are so placed that the drainage or overflow can not pollute the water supply or camp grounds.

When the camp is for one night only, shallow trenches suffice. In more permanent camps the trenches are about 2 feet wide, 6 feet

deep, and 15 feet long, and are screened by brush, wattling, or old tent flies. In fly season seats with lids are provided and covered to the ground with thin muslin to keep flies from reaching the deposits; urinal troughs discharging into the trenches are suspended in rear of the seats; they may be made of muslin coated with paint or other suitable material. When the odor becomes offensive disinfectants are used, or the contents are covered with ashes or earth; when filled to within 2 feet of the surface, such latrines are discarded and filled with earth. All latrines and kitchen pits are filled in before the march is resumed. In cold weather the contents of latrines are covered once a day with lime, ashes, or earth.

In permanent camps and cantonments not provided with a sewerage system, incinerators, or latrine troughs and odorless excavating tank wagons are used if available. In their absence, temporary outhouses are constructed and arranged to keep flies from reaching the deposits, covers for the seats and disinfectants being provided. If necessary, urine tubs may be placed in the company streets at night and emptied after reveille.

Shelter during battle.

191. During a lull in an engagement, or when hostilities are suspended for the night, the troops bivouac in line of battle on or near the position they occupy, the officers in rear of the center of their units. Reserves required to remain in instant readiness, generally bivouac in column with a flank to the front, the officers on the flank away from the enemy. After the outposts are established, the commander of the main body decides whether the troops shall use their shelter tents or not. In bad weather outposts may use their shelter tents if they can be concealed.

Shelter during sieges.

192. On account of the long range of modern fortress artillery, the camps or cantonments of the main body of the besiegers, unless good cover is available, are generally not less than five miles from the enemy's works. To guard against sorties a large part of the command is continually on outpost duty, but when that duty is completed the troops return to their own camp with the main body in order to recuperate from this arduous work. Shelter at the outposts may be left standing from day to day.

To guard against danger from epidemics in the necessarily crowded camps or cantonments of the besiegers, the most careful attention is paid to the water supply and sanitation.

ARTICLE VII.

THE SERVICE OF SUPPLY.

GENERAL PRINCIPLES.

193. Due to constantly changing conditions, supplying an army in campaign with the necessary subsistence, forage, ammunition, sanitary stores, etc., is a difficult problem, and demands the greatest efficiency and energy on the part of those charged with that duty.

Inadequacy of transportation, unexpected changes in the plan of operation, hostile interference with the line of communications, etc., often delay or prevent the delivery of supplies. Nevertheless, the service of supply is considered good when the transportation with the mobile troops is kept at a minimum and military operations are not impeded by lack of food or other necessary supplies.

194. Commanders keep their supply officers informed of the plans, as far as practicable, so that suitable preparations can be made.

195. The Quartermaster's Department is charged with the duty of supplying troops with clothing, fuel, forage, camp and garrison equipage, and shelter for men and animals; the Subsistence Department supplies subsistence and the means of preparing it for use; the Ordnance Department furnishes arms, ammunition, and certain equipments. In addition, the Quartermaster's Department, except as provided for the Sanitary Service, transports military supplies. (Art. VIII.)

In campaign, *coordination in the transportation of military supplies* is secured by the careful supervision of the commanders having charge of that duty.

196. For troops in campaign there are two sources of supply, namely:

1. The theater of operations.
2. The base of operations.

It is generally necessary to utilize to the fullest extent the food, especially the forage, available in the theater of operations. This

becomes practically imperative when the line of communications runs through a country devoid of railroads and waterways.

SOURCES OF SUPPLY.

(1.) *The theater of operations.*

197. When the theater of operations is in the home country or that of an ally, supplies are obtained by purchase; when in hostile territory, by requisition.

198. Requisitions.—Requisitions are regular levies of supplies made by an invading army for its support. The orders of a commander directing requisitions should be explicit as to the amount and character of the supplies desired, and the prices to be paid. Anything necessary for the troops may be taken, such as food for men and animals, clothing, medicine, means of transportation, etc. Requisitions are official and not private acts. Unauthorized seizure of property is punished as looting. (Secs. 361–365.)

Requisitions are either (1) *direct* (foraging), or (2) by a systematic *collection into depots*. In either case they are best made, if time permits, by establishing places of delivery and notifying the inhabitants of the kind of supplies required. If practicable, cooperation of the civil authorities should be secured. Troops are used only when necessary to stimulate deliveries or to overcome resistance. Humane treatment of inhabitants generally secures better results than severity. However, when the population shows a hostile disposition the necessary force is used. If cash is paid, it will seldom be necessary to resort to *forced* collection with troops, especially if information is given out that forced collection will be made should the inhabitants fail to bring in the supplies required.

Direct requisition is made by detachments sent out from the *mobile forces* to collect supplies for immediate use. Fractions of a command may be assigned sections of the country from which to draw supplies; in this case, if there is considerable variance in results, supply officers provide for an equitable distribution of the food supplies gathered. The detachments are commanded by officers when practicable.

Food supplies gathered by independent cavalry and advance guards in excess of their needs are turned over to the troops in rear.

When large quantities of subsistence, forage, or fuel, are to be *collected in depots*, requisitions are made to cover a wide section of the country in order to lessen the burden on the people. The work is generally in charge of supply officers connected with *the line of communications*.

The right to requisition food supplies in a hostile country carries the right to impress labor and means of transportation to facilitate delivery, and to make use of flour mills, bakeries, blacksmith shops, etc.

Property obtained by requisition is either paid for or restored with suitable indemnification. If the supplies are not paid for upon delivery, receipts are given, copies or stubs being retained. The receipts are redeemed by the proper officers at the earliest opportunity. The commander may order payment to be made from government funds, from captured public funds, or from contributions levied on the country.

In addition to requisitions for the support of an invading army, the laws of war authorize the commander to levy *contributions*. These differ from requisitions in that they are *taxes* levied under some general law of assessment and payable in money. They are generally collected by the local authorities on orders from the commander of the invading army. Contributions are not refunded, but receipts are given to every contributor.

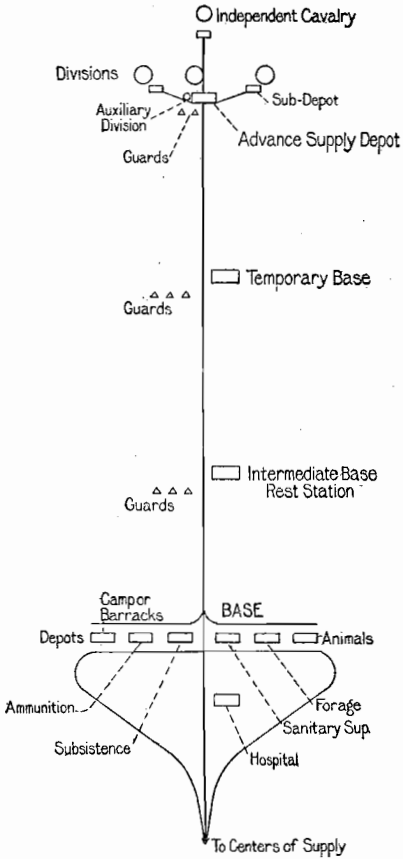
Subsisting troops by *billeting* (sec. 180) can generally be resorted to only in case of small commands, or when troops are scattered. Compensation to be allowed for shelter and meals is announced in orders.

While a well-organized system of requisition is of great service in relieving the transportation, exclusive reliance cannot be placed thereon, even in the most productive countries. As soon as the army halts or when it advances slowly, recourse must be had to shipments from the base or depots in rear.

(2) *The base or depots in rear.*

199. The general method of supplying an army in the field from the base of operations is shown in the sketch of a line of communications. A base is selected and equipped, and facilities for a line of communications provided. The line of communications consists either of railway (if necessary constructed as the army advances) or water service, or of both. Failing these, wagon transportation is utilized.

LINE OF COMMUNICATIONS



The head of the line of communications is kept practically in touch with the army as the latter advances, *so that supplies can be issued from time to time direct to the division trains*, the supply officers of the line of communications turning the stores over to the division supply officers. It is the duty of the commander of the line of communications to supply the army. If the rail or water head can not keep pace with the march of the troops, he resorts to wagon transportation, of which an adequate supply, depending upon the situation, must be maintained at the rail or water head. At least 3 wagon companies for each division, including cavalry divisions, are held at the head of the line of communications.

200. Movable Supply Depot.—When supplies are to be issued from the line of communications, a supply or issue depot, called the *advance supply depot*, is established at the head, and to this the division trains are sent. When practicable, this depot is established where the army halts. It should never be more than two marches in rear.[a] When an army is operating on a broad front, for instance, during a great battle, it may become necessary for the line of communications to establish subdepots for those divisions operating at such a distance that their supply trains can not reach the advance supply depot.

The advance supply depot is moved from time to time, conforming to the operations of the army. It is established on railroads, waterways, and cross roads, to facilitate transportation and issues.

201. Field and Supply Trains.—The field and supply trains form the *connecting link* between the troops and the advance or subsupply depots. On the march, the field trains start with at least two days' subsistence and three of grain for the command, the supply trains with three days' subsistence and grain. When wagons of the field trains are empty, they are available for use in securing additional supplies. The subsistence and forage wagons of a division supply train are divided into three sections, each carrying one day's supply for the division. (Secs. 34, 230, 236.)

The rations and grain carried in the supply train are considered a *rolling reserve*, which follows the command and is not used so long as the troops can be subsisted and foraged from the supply depot or on the country, issues being made direct to the field trains when practicable. When it becomes necessary to draw from the

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[a] With auto wagons or trucks carrying 3,000 pounds or more, the difficulties of supply can be greatly reduced.

supply train, one section moves up to the troops and turns the supplies over to the field trains, or makes issues direct. When a supply section has been emptied it proceeds to the supply depot, reloads, and returns as rapidly as possible. During a retreat the supply train halts and awaits the arrival of the troops, or leaves the stores in temporary depots.

202. **Base.**—If the line of communications is long, a *temporary base* may be established near the probable theater of combat for the accumulation of supplies, including animals for the cavalry, artillery, and transport services.

To replace losses from combat and sickness, *reserves of men* are held at or near the base of operations and are forwarded from time to time as required.

Depots at the base are filled by shipments from supply centers, by deliveries made by contractors, or by purchase in open market.

THE QUARTERMASTER'S DEPARTMENT.

203. Orders issued from time to time by the War Department contain tables enumerating the supplies and quantities thereof to be furnished by the Quartermaster's Department for the use of troops in the field.

These supplies are divided as follows:

(*a*) For *field service* from one to thirty days (normal campaign allowance).

(*b*) For *permanent camps* (occupation or maneuver).

(*c*) For *reserve,* at depot, to complete with (*a*) and (*b*) one year's supply.

The supplies for (*a*) consist of those that should be *taken with organizations* for use in maneuvers or actual campaign. They are issued to regular troops at their stations and to other troops, so far as necessary to complete their equipment, when mustered into the service. Commanders are charged with the duty of seeing that their troops are equipped at all times with these supplies.

The supplies for (*b*) are for troops when in the field for a length of time such as to require supplies other than and in addition to those furnished for (*a*). These supplies are packed and marked "Permanent camp" and with the name of the organization to which they belong. They are supplied to regular troops at their stations and accompany the troops or are shipped at the proper time to the place where required. The supplies for (*c*) are held at general depots to replace supplies worn out or lost and for emergencies.

They are marked "Reserve" and are supplied in accordance with the methods governing the Quartermaster's Department, as prescribed in regulations and manuals.

The supplies listed in the above-mentioned tables are for troops at *war strength* and must be modified according to the actual strength of the troops present.

During mobilization, usually by rail or boat, the corresponding combat and field trains, draft animals, public and private mounts, and the necessary forage are transported with the troops or follow in stock trains or boats as closely as possible.

Fuel and forage.

204. In campaign the supply of *fuel* for cooking and heating is usually drawn from the theater of operations by requisition (sec. 198) or purchase, and is attended to by the Quartermaster's Department. In emergencies of war fences, lumber, and old buildings may be seized for fuel. On the march it is sometimes desirable to carry on the wagons enough fuel to cook the first meal. The fuel supply of a country to be invaded is always considered in advance, and measures are taken to supply any deficiency, for the lack of fuel may prove a serious problem. For daily cooking purposes about 3 pounds of wood per man are necessary.

The forage ration is 14 pounds of hay and 12 pounds of oats, corn, or barley for horses, and 14 pounds of hay and 9 pounds of oats, corn, or barley for mules. To each animal 3 pounds of bran may be issued in lieu of that quantity of grain.

In the field this allowance must often be reduced and supplemented by grazing and other kinds of food, such as green forage, beans, peas, rice, palay (unshelled rice—Philippines), wheat, and rye. The amount of each issued depends upon circumstances. Wheat and rye should be crushed and fed sparingly (about one-fourth of the allowance). For unshelled corn add about one-quarter by weight.

In campaign the *resources of the country in forage must be utilized as far as possible*, systematic collection being made by requisition or purchase. During operations, depots of grain and compressed hay are formed at convenient railway points and boat landings. On the march, grain is usually the only forage carried.

In the cavalry a small reserve of grain—about 6 pounds—may be carried on the horse. In the artillery a small quantity of grain is generally carried on the carriages.

Draft animals receive full forage as long as possible.

In active campaign, accountability for fuel and forage terminates with their transfer to the divisions, but all commanders and supply officers are charged with responsibilty as to their proper use.

SUBSISTENCE.

205. The Army Regulations prescribe the following rations, the commander determining the kind appropriate for the service to be performed:

Garrison ration.—For troops in garrison and permanent camps.

Field ration.—For troops in the field and not in permanent camps.

Haversack ration.—For troops in active campaign when transportation is limited.

Travel ration.—For troops when traveling otherwise than by marching and without cooking facilities.

Filipino ration.—For Philippine Scouts.

Emergency ration.—For troops in active campaign in cases of emergency.

Haversack ration.

	Ounces.
Bacon	12
or canned meat	16
Hard bread	16
Coffee, roasted and ground	1.12
Sugar	2.4
Salt	.16
Pepper, black	.02

EMERGENCY RATION.

The emergency ration is a preparation of food compressed into cakes and packed in sealed tin. It is furnished in addition to the regular ration, but is not opened except by order of an officer or in extremity, nor used when regular rations are obtainable.

In addition to the regular rations, commanders may authorize the issue, within limits prescribed in Army Regulations, of certain articles, such as soap, candles, and matches.

METHODS OF SUBSISTING—DURING MOBILIZATION.

206. Mobilization is generally effected by rail or boat, and in such cases the troops carry, in addition to the emergency ration, rations for the number of travel days plus one, to cover subsistence for the first day after arrival.

In movements by rail *kitchen cars* are provided, if practicable, in which the troops are subsisted; otherwise, arrangements are made for procuring meals at stations en route, or at least liquid coffee, the latter being used with rations carried by the troops.

On vessels of the government transport service, troops are usually subsisted on the garrison ration, varied by the substitution of other articles of authorized subsistence stores, the messing facilities of the ship being utilized. On passenger boats subsistence is usually prepared in the manner prescribed for troops traveling by rail. (See Army Transport Service Regulations.)

In mobilization camps rations and sales stores are furnished and issues made substantially as in garrison. As a rule, depots are formed for each division. Division chief commissaries arrange for the supply of fresh beef and vegetables, establish and supervise division bakeries, and make timely requisition on purchasing commissaries for other stores. Issues are made direct from the division depots to regimental commissaries, the latter distributing the rations to the company units.

METHODS OF SUBSISTING—IN THE FIELD.

207. In time of peace troops on the march are subsisted from supplies carried in the trains or accumulated at convenient supply depots, advantage being taken of railway and water facilities. The character of the subsistence is determined, within the judgment of the commander, by the situation.

In campaign a command carries as a part of its *normal equipment* the following rations:

1. In the field trains, at least two haversack rations.
2. In the supply train, three haversack rations.
3. By each man, one emergency ration and one haversack ration; in addition, when combat is probable or the troops are liable to be separated from their field trains, each man starts with one additional haversack ration.

The number of rations carried varies, depending upon the proximity of depots, transportation available, and the supplies to be found in the country. By reducing baggage and forage to a minimum and correspondingly increasing the number of rations carried, a division can subsist two weeks on its own supplies.

208. Issues.—The issue of rations from supply depots is governed by circumstances. In stationary camps rations are generally

issued as in garrison. On the other hand, when the army is in motion rations are issued for much shorter periods, depending upon the establishment of the supply depots. When rations are to be issued from a supply depot, the field trains, under commissary officers, proceed to the depot and draw rations on ration returns approved by the commanders for the period ordered. If rations can not be obtained from supply depots (including stores collected in depots by requisition) they are drawn from the supply trains.

Full field rations are issued from the supply depots whenever practicable.

209. Sales Stores.—As a rule stores are not kept for sale in advance of the supply depots pertaining to the line of communications. However, when troops have gone into permanent camp or cantonment, the commander may order such stores to be kept for sale in the divisions or separate units.

210. Extra Issues.—When troops have been subsisted on the field or haversack ration, the commander, when necessary for their health and comfort, may direct the issue in kind of specific articles of subsistence stores of money value equal to the difference between the price of the field or haversack rations consumed and that of the same number of garrison rations. Such extra issues can not be ordered after sixty days from the last date on which the troops were subsisted on the field or haversack rations.

211. Fresh Meat.—If practicable, troops in the field are provided with fresh beef or mutton every other day. On the march and during combat, the supply is generally less frequent, depending upon the transportation facilities and local supplies.

When beef, cattle, or sheep are not procurable locally, effort will be made to supply frozen or chilled beef or mutton.

212. Fresh Bread.—Fresh bread is provided, in lieu of hard bread, whenever practicable. Advantage should be taken of local bakeries, but the chief reliance must be placed upon the division field bakeries. The latter, for convenience and security on the march, are generally attached to the supply trains, but are set up at the most convenient points.

213. Accountability.—Accountability for subsistence stores terminates with their transfer to the divisions. Commissaries in front of the advance depot keep daily diaries on forms furnished by the Subsistence Department and in accordance with printed instructions thereon.

Care of troops.

214. Commanders of company units exercise constant supervision over the preparation of the food and the messing of their men.

On marches from day to day the men generally carry light lunches. Dinners are prepared, as a rule, after the field trains have joined their organizations. When it is probable that the field trains will be late, regimental commanders may require cooking utensils to be taken on the combat trains or otherwise, so that the rations carried by the men may be prepared after arrival in camp. Regimental commanders decide when the rations carried by the men are to be used. When such rations have been used, lost, or destroyed, they are replaced from the field trains at the first opportunity.

215. Messing.—As a rule, messing is by company units, though it may become necessary to form messes of squads or even to require individuals to do their own cooking. For this reason instruction is given all men as to the proper method of preparing the haversack and emergency rations.

In campaign, officers of company units mess with their organizations, or with the battalion mess if one with suitable facilities is provided. Battalion officers mess with the companies or provide a battalion mess. A regimental commander and his staff form one mess, or the officers may mess with the band or other organizations. To reduce transportation in war by abolishing officers' messes, the commander of a field army or of an independent division or brigade may require all officers to mess with organizations.

When officers mess with organizations they pay to the company fund a proper charge therefor, determined by the company council.

In the field not in campaign, commanders regulate the formation of officers' messes, due regard being paid to the wishes of the officers concerned and to the transportation available. In permanent or maneuver camps, complete regimental messes may be organized.

216. Kitchens.—In the absence of other provision, cooking fires are prepared as follows:

When fuel is plentiful, a trench about 1 foot deep is dug to hold the fire. Green poles, or sections of iron pipe resting on uprights of suitable height, support the camp kettles. If fuel is scarce the trench is made somewhat narrower than the diameter of the camp kettles; the latter then rest on the ground, and the intervening spaces are covered with stones or clay, forming a sort of flue. The

draft may be increased by widening the opening toward the wind and by building a chimney of sod or stones at the leeward end. The trench should have a slight fall from the chimney for drainage and to improve the draft. Four such trenches radiating from a common chimney afford good draft whatever the direction of the wind.

When *bakeries* or portable *ovens* are not available, suitable ovens must be improvised. They may be constructed of brick or stone, and covered with earth the better to retain the heat. If these materials are not available, a simple expedient is to lay an empty barrel on its side in a depression, knock out one head and plaster the barrel over with 6 to 8 inches of clay, and then cover with an equal thickness of earth. A flue of clay is constructed at the closed end of the barrel, which is then burned out, leaving an even of baked clay.

When clay banks are convenient, ovens may be excavated therein and used at once.

Kitchens, cooking utensils, mess tables and the neighboring grounds are kept scrupulously clean. In temporary camps liquid refuse is thrown into pits and covered with pieces of thin muslin or otherwise; solid matter is buried or burned; in permanent camps kitchen waste is collected in covered barrels or boxes and removed by police parties in suitable tank wagons; if the latter are not available, holes are dug with post augurs or otherwise, and covered with lids; liquid matter is poured into these holes through wire netting or gunny sacks and the solid matter removed; solid matter is carried away in wagons and buried or burned. When practicable wire screen or mosquito netting is provided to protect food from flies.

If wood is plentiful and medium sized stones can be obtained both liquid and solid refuse can be disposed of by using *incinerators* improvised for each company as follows:

A pit is dug about 5 feet long, 2½ wide, 6 inches deep at one end, and 12 at the other; the excavated earth is banked around the pit and the latter is then filled with stones on which a fire (can be used for cooking) is built; when the stones have become heated liquid refuse is poured into the pit (shallow end) where it gradually evaporates; solid matter is burned on the fire.

AMMUNITION SUPPLY.

217. Ammunition is supplied to troops in campaign in the following manner:

It is shipped from arsenals to ammunition depots at the base of operations; it is then carried by the line of communications to the advance supply depot and there delivered to the ammunition trains. The combat trains are replenished from the ammunition trains, though in exceptional cases issues from a supply depot may be made direct to combat trains. From the latter ammunition is delivered to the troops.

At the beginning of a general engagement, two wagon companies for each division engaged (including the cavalry division) are loaded—one with small arms and the other with artillery ammunition—and held in readiness at the advance supply depot.

218. Accountability.—Ordnance officers account for ammunition until it is turned over by them to the ammunition or combat trains, but there accountability ceases, though to keep a record of expenditures, issues from ammunition trains are covered by memorandum receipts of the officers to whom the issues are made.

All officers and men into whose hands ammunition comes are held responsible that it is properly used and that no waste is committed.

219. Ammunition Trains.—The ammunition train of a full *division* is normally loaded as follows:

(*a*) For small arms (three wagon companies, 81 wagons), 77 wagons, each with 25 boxes (1,200 rounds per box) of rifle and 1 box (2,000 rounds) of revolver ammunition, and 1 wagon with 30 boxes of revolver ammunition.

(*b*) For artillery (2 wagon companies, 54 wagons), 51 wagons, each with 25 boxes (4 rounds per box), and 1 wagon with artillery stores.

If available, caissons instead of wagons may be used for carrying artillery ammunition. Each caisson carries 106 rounds, or 48 caissons would carry about the same as 51 wagons.

During combat the ammunition train takes station as ordered. It is generally in a protected position, near good roads if possible, where the empty battalion ammunition wagons or caissons can be replenished. It may be advisable to divide the train and assign the parts to different positions in rear of the line. A brigade commander may select a rendezvous station for the empty battalion

ammunition wagons of his command and request that wagons from the ammunition train be sent to that place to refill battalion wagons.

If no orders have been received and firing indicates that a serious engagement has begun, the ammunition train moves to a favorable position and its commander places himself in communication with the division commander and with the commander of the artillery.

The position of an ammunition train, or detached part thereof, is marked by a *red* flag during the day, and by a *red* lantern at night. (Secs. 34, 235.)

220. Combat Trains.—The small arms ammunition wagon (2 for each infantry battalion and 1 for each squadron), in addition to intrenching tools, etc., are usually loaded as follows:

Infantry, 22 boxes of rifle ammunition; cavalry, 20 boxes of rifle and 4 of revolver ammunition. Ammunition in the artillery combat trains is carried in caissons. Battalion commanders are charged with keeping their ammunition wagons properly filled and equipped.

As a rule, combat trains march immediately in rear of the battalion unit to which assigned, though when combat is not probable they may be assembled in rear of their respective regiments, or sent to join the trains. (Secs. 34, 234.)

Infantry.

221. The following table explains how the small-arms ammunition of a full *division* is carried and distributed. Smaller commands are similarly equipped:

How carried.	Number of rounds.		Place.		How replaced.	Total.
	Rifle.	Revolver.	March.	Combat.		
In the belt.....	(a) 90.....	20 for revolver when carried.	.....	.....	From combat train.	(a) Total for division about 1,350,000 rounds.
On mules of machine gun company.	(b) 46,500...	.....	With guns..	Under cover near guns.	From combat or amm. train.	(b) Total for division 465,000 rounds.
In combat train	(c) 120 — 2 bandoliers per rifle (1 for cavalry).	8,000 for cavalry.	In rear of battalion.	Under cover near battalion.	From ammunition train.	(c) Total for division 1,497,600 rounds.
In ammunition train.	(d) 120 per rifle plus reserves.	107 boxes....	Ordinarily in rear of sanitary troops.	As ordered..	From supply depot.	(d) Total for division 2,310,000 rounds.

This distribution allows 330 rounds per rifle with a reserve for machine guns, etc. Engineers or signal troops requiring ammunition draw from the nearest ammunition wagons. Cavalry and other men armed with both rifle and revolver, carry in the belt 90 rounds of rifle and 20 rounds of revolver ammunition.

222. In campaign, all officers and noncommissioned officers endeavor to keep the belts of their men filled with ammunition. Not only must advantage be taken of every opportunity to replenish the supply, but prospective expenditures must be anticipated by issuing ammunition in advance. As troops go into combat two bandoliers from the combat train are issued to each man, unless otherwise ordered.[a] If additional ammunition is needed during combat, the lead mules of the battalion ammunition wagons may be converted into pack mules and ammunition delivered to the firing line in that manner. If this is impracticable, small squads of men under noncommissioned officers may be detailed to carry ammunition to special parts of the firing line, or reinforcements may be given extra ammunition for that purpose. If available, the division pack train is used to carry ammunition to ground impracticable for wagons, or wherever it may be urgently needed.

Every lull in the fight must be utilized to renew the supply, and to equalize the same in each company. The contents of the belts of the dead and wounded are distributed whenever practicable, though the latter must not be left wholly without means of self-defense. *In no case are men sent to the rear for ammunition if it can be obtained in any other manner.* When ammunition is running low, officers caution the men to reserve a few rounds each for emergencies.

The morning following an engagement should find the firing line and all ammunition wagons replenished.

On the defensive, especially in prepared positions, extra ammunition may be placed on the firing line.

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[a] During combat the company mess sergeants and cooks and the battalion supply sergeants join their battalion combat trains, unless otherwise ordered, and assist in the distribution of ammunition.

Artillery.

223. When the battery goes into action each piece is supplied from its own caisson. With the firing battery are two additional caissons from which the gun caissons are replenished. This replenishment is ordinarily effected by the cannoneers during lulls in the action.

The ammunition in the gun limbers is kept intact as a last reserve, and whenever used is replaced as soon as practicable.

The emergency ammunition on the guns is used only in extreme cases, and must be immediately replaced.

Caissons from the reserve (combat train) replace empty caissons of the firing battery. Empty caissons are either refilled from the limbers of the reserve caissons or sent to the ammunition train to be refilled. If necessary, wagons or caissons from the ammunition train may be sent direct to the firing battery.

Horse batteries in a cavalry action draw ammunition, when necessary, from the limbers; the ammunition so used should be replaced as soon as practicable.

The following table shows how divisional artillery ammunition is carried and distributed:

Two regiments, each of 2 battalions of 3 batteries of 4 guns.

How carried.	Rounds per gun.	Place.		How replaced.
		March.	Combat.	
In the gun limber.....	36	.....	Under cover to a flank and rear, or in rear of pieces.	From reserve caissons, or from caissons of the firing battery.
For emergency on gun..	4	.....	.....	.....
In the caissons (36 in limber, 70 in caisson body; total per caisson, 106; three caissons per gun).	318	All habitually with the battery; subdivisions made after arrival at rendezvous position.	6 caissons in the firing battery; the other 6 not more than half a mile in rear; chief of caissons responsible for timely arrival of replacing caissons.	Reserve caissons replace caissons of the firing battery. Empty caissons are refilled from limbers of reserve caissons, or from ammunition train. In rare cases wagons or caissons go direct from ammunition train to the firing battery.
In ammunition train...	106	With the ammunition train.	Part generally approaches vicinity of battlefield; the rest held back.	From supply depot. If necessary, ordnance trains are started toward the front when action is contemplated.
Total.....	464			

Total ammunition 22,284, or 12 less if caissons are used in ammunition train.

Cavalry.

224. Ammunition Train.—The ammunition train of a cavalry division is normally loaded as follows:

(*a*) For small arms (2 wagon companies, 54 wagons)—52 wagons, each with 20 boxes of rifle and 4 boxes of revolver ammunition.[a]

(*b*) For artillery (1 wagon company, 27 wagons)—25 wagons, each with 25 boxes, and 1 wagon with 12 boxes and artillery stores.

Rations, forage, and the necessary intrenching tools are also carried, but the loads are kept as light as possible.

The ammunition for a cavalry division is carried, distributed, and replaced substantially as in the case of infantry, the cavalryman carrying 90 rounds of rifle and 20 rounds of revolver ammunition in the belt, and, when combat is imminent, 60 rounds of rifle and 20 of revolver ammunition in the saddle bags.

Combat trains of cavalry acting independently generally march with the horse artillery, if any; otherwise in rear of their squadrons or regiments or with the ammunition train.

As cavalry in campaign is liable to be separated from its combat and ammunition trains, it is authorized, in such emergencies, to draw from the most available ammunition wagons or source of supply. The use of pack animals is often necessary.

AMMUNITION SUPPLY FOR A FIELD ARMY.

225. To replace ammunition used in combat, an amount not less than that carried by the mobile forces should be kept at or near the advance supply depot, and an additional amount approximately equal to all ammunition in advance of the base should be available at the base of operations or other depots. This distribution, in rounds, is shown in the following table:

[a] The squadron ammunition wagons are similarly loaded.

Location.	Per rifle.	For each machine gun.	For each 3-inch field gun.	For each 4.7-inch heavy field gun.	For each 6-inch heavy field howitzer.
With the mobile forces	330	17,500	464	180	100
At or near the advance supply depot	330	17,500	464	180	100
Total	660	35,000	928	360	200

OTHER SUPPLIES.

226. Sanitary stores received at the advance supply depot are usually placed in a depot (sanitary supply depot) apart from other stores. They are issued to ambulance companies and to field and evacuation hospitals as required.

227. Explosives and other material for military demolitions are distributed to the engineer troops, or held in reserve at the engineer park.

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ARTICLE VIII.

TRANSPORTATION.

GENERAL PRINCIPLES.

228. To supply an army in the field, advantage is taken of the most available means of transportation. To the base of operations and from the base to the supply depots at the head of the line of communications, the means of transportation generally consists of rail or water service or of both; from the supply depots to and within the army itself, supplies are transported by wagons or other vehicles and by pack animals.

Military trains are at all times provided with the necessary guards and escorts. Train guards protect all property in their vicinity, preserve order, and assist when a vehicle is broken or stalled. Teamsters and packers in campaign are armed with revolvers. None but authorized vehicles accompany military trains, and no person is allowed to ride on such trains without proper authority. In case of danger, any attempt of drivers to release the animals by cutting the traces or otherwise in order to escape is summarily stopped.

Officers in charge of wagon trains see that the latter keep their proper places in column, and that they do not needlessly impede the movements of troops or trains in rear.

Commanders order frequent inspections to see that no unauthorized vehicles accompany the command, that the baggage of officers and others does not exceed the prescribed allowance, and that the wagons or pack mules are not overloaded.

229. The standard wagon is the four-mule *army wagon*. It is used for transporting all supplies, unless special vehicles are provided. The normal load on good roads is 3,000 pounds. When sufficient army wagons are not available, equivalent commercial wagons are used.

Wagon transportation.

230. Field Trains.—The baggage (personal baggage of officers and men, mess outfits, and material for records), tentage, at least two days' rations and three of grain, and sometimes extra ammunition, are carried in wagons assigned to the organizations and to headquarters. Such wagons and others (those of sutlers, correspondents, etc.) attached by proper authority, collectively form the *field train* of the unit to which they are assigned. Field wagons are plainly marked with the name of the organization or headquarters to which they belong. The company field trains are usually commanded by supply sergeants; the battalion, regimental, etc., field trains by supply officers. On the march brigade and division headquarters wagons are generally attached to some regimental field train. (Secs. 34, 201.)

The field wagons of a regiment are usually divided into two groups, (1) those carrying baggage and tentage, and (2) those carrying rations and forage exclusively. For instance, the baggage and tentage of two companies may be carried on one wagon, the rations and forage on the other; the latter when empty, then becomes available for obtaining additional supplies.

231. The amount of baggage, tentage, etc., to be carried, depends upon the climate, season of the year, condition of the roads, etc. The number of field wagons may be increased in order to carry additional supplies, or to overcome special difficulties of climate or country. More often, however, due to lack of transportation or to the condition of the roads, a reduction will be necessary, and the troops must then reduce their impedimenta accordingly, frequently to bare necessities.

The allowance of baggage and tentage for the field will therefore vary between that authorized for campaign and that authorized for permanent camps. When troops take the field, *whether in peace or war*, without special orders in regard to baggage and tentage, the personal baggage and the tentage *carried in the field trains* is the normal campaign allowance and will consist of:

1. Surplus kits of the men (not exceeding 7 pounds per man) as prescribed in orders from the War Department.
2. The bedding and clothing rolls of officers.
3. The headquarters mess outfits.

4. Tentage for officers as authorized in the following table, the tentage for the men being limited to their shelter tents, which are usually carried on the person.

Field allowance of tentage and baggage for officers:

	When carried in field trains [a] and no allowance is specified in orders (normal campaign allowance).		In permanent or maneuver camps.	
	Wall tents, quarters, and offices.	Personal baggage.	Wall tents, quarters, and offices.	Personal baggage.
		Pounds.		*Pounds.*
General	3	700	4	2,000
Lieutenant-general	2	600	3	1,500
Major-general	2	500	3	1,000
Brigadier-general	1	400	3	700
Colonel	1	300	2	400
Lieutenant-colonel, major	1	200	2	400
Captain		100	1	200
Lieutenant		75	1 (for 2)	150
For every 3 company officers, or fraction thereof	1			
For every 2 staff officers, or fraction thereof, below the grade of major	1			
For each authorized headquarters mess—may be reduced (sec. 215):				
Battalion	1	300	2	350
Regiment	1	350	2	400
Brigade	1	350	2	400
Division or field army	2	400	3	500

[a] In campaign this allowance may be increased only by the general commanding in the field; in time of peace, by the officer ordering the troops into the field, but in no case will the allowance authorized for permanent camps, as published in War Department orders, be exceeded.

A company wagon loaded with the normal campaign allowance of tentage and baggage, cooking utensils, etc., can easily carry four days' rations and forage for the company.

232. Whenever the field and combat wagons are not carrying full loads, regimental commanders may direct that a part of the equipment of the men be carried on those wagons.

233. Field trains are guarded, so far as practicable, by men on duty with the train; by convalescent and other noneffectives, by dismounted men in the cavalry, and by men from the battery reserves in the artillery.

234. Combat Trains.—Combat trains consist mainly of those wagons (ammunition wagons) or vehicles assigned, ordinarily, to battalions and squadrons for the purpose of supplying troops with extra ammunition, intrenching tools, etc., needed in actual combat. Ordinarily they are commanded by supply officers or by experienced noncommissioned officers. (Secs. 34, 220.)

In addition to ammunition and intrenching tools, the ammunition wagons carry the company litters,[a] three days' forage for the animals, and pack outfits to enable the lead mules to be converted into pack mules.

The combat trains of the engineer and signal battalions consist of those wagons or vehicles that carry the material for the special work of those troops.

On the march, the ambulance that accompanies each regiment is usually attached to the combat train of the rear battalion or squadron when such train is present with the troops.

235. Ammunition Trains.—The great expenditure of ammunition possible with magazine rifles and quick firing field artillery renders arrangements for its timely renewal of vital importance. Under modern conditions a *reserve* of 120 cartridges for each rifle, about 10,000 for each machine gun, and 100 rounds for each field gun of a division should be carried, necessitating approximately 8 ammunition wagons for each regiment of infantry and cavalry, and one wagon or caisson for each gun. These vehicles, together with additional wagons for rations, forage, etc., are organized into wagon companies, and constitute the ammunition train of a division. Ammunition trains are usually commanded by artillery officers, assisted by infantry or cavalry officers who will have immediate charge of small arms ammunition supply in combat. (Secs. 34, 219, 224.)

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[a] When the combat trains are not present, these litters are carried on the field trains.

236. Supply Trains.—Supply trains, normally one for each division, carry a reserve supply of subsistence and forage (generally three days') for the command. They are ordinarily commanded by quartermasters acting under division chief quartermasters. In campaign, the wagons (6) carrying sanitary supplies, the division field bakery (14 wagons—1 for each regiment or equivalent, and 1 field wagon) and pack train or trains are generally attached to the division supply train, though the bakery wagons may be assigned to the brigade or regimental field trains. (Secs. 34, 201.)

Pack transportation.

237. Troops operating in country impassable for the ordinary vehicle are supplied by means of pack trains. These trains are also valuable adjuncts to wheel transportation during combat and in the rapid operations of cavalry.

The average load of a pack mule is 250 pounds, and a train thus loaded can easily travel from 20 to 25 miles a day on ordinary roads or trails; in rough country from 10 to 15 miles. For shorter marches the load may be increased to 300 pounds or even 350 per animal. On forced marches the load should not exceed 200 pounds.

Transportation by rail.

238. Preliminaries.—When troops or military supplies are to be transported by means other than that possessed by the troops themselves, the transportation is effected by the Quartermaster's Department in conformity with Army Regulations and orders from competent authority. Such orders are issued in ample time, and when issued for the transportation of troops, give an exact return of the command, so that proper and sufficient transportation may be in readiness. Transportation should be provided at the rate of 3 men to each section in tourist sleepers and 3 men to each two seats in day coaches.

239. For the transportation of individuals, the local quartermaster issues transportation requests which the holders convert into tickets. For detachments and organizations traveling on regular trains, whether in separate cars or as ordinary passengers, the commander or his quartermaster takes charge of the transportation request.

The commander should be furnished with a copy of the contract and an itinerary of the route, showing any change of cars, and where stops are to be made for subsisting the men or for watering and feeding the animals.

240. With organizations at war strength, separate troops, batteries, and commands of infantry, engineer, signal or sanitary troops larger than one company, generally require special trains. As it is preferable to have trains of moderate size with good speed rather than long trains with low speed, the maximum to be assigned to one train is generally as follows:

1 battalion of infantry, or
2 troops of cavalry, or
1 battery of artillery, or
1 company of engineers with bridge train.

241. The arrangements with the railroad companies may be general or special; that is, the Quartermaster's Department may have an agreement with respect to all the troops that may be sent over a line, or a separate contract, after formal bids, may be made in each case. The former method is preferable, especially in time of war.

242. Troops proceeding to rendezvous or maneuver camps may be supplied with animals and wagons after arrival; but organizations going to the theater of operations by rail should be accompanied by their full transportation equipment.

243. For journeys requiring the troops to spend a night on the train, standard sleepers should be provided for officers and tourist sleepers for the men.

Animals are loaded in stock cars; artillery carriages, pontons, wagons, and ambulances on flat cars; other property and forage in box cars; personal baggage and travel rations in baggage cars.

244. Trains are usually made up in the following order:

1. The flat cars with artillery carriages, pontons, wagons, etc., and ambulances from front to rear.
2. Box cars with property.
3. Stock cars.
4. Box cars with forage.
5. Baggage cars.
6. Kitchen car with rations.
7. Coaches or tourist sleepers for the men.
8. Sleeper for officers.

If it is necessary to divide a train, some officers and men accompany each section. The troops should not be separated from the

animals if it can be avoided; but if the animals are shipped in separate trains, selected detachments under officers accompany them, and such trains precede the troops.

All property (including personal baggage) to be taken is plainly marked, and that of different organizations is kept separate.

When supplies are shipped, the contents of each car are marked or placarded on the outside of the car, and the latter, when practicable, is also marked with the name of the organization to which the supplies are sent.

245. Preparation of Cars.—Upon receipt of orders for the movement of troops by rail, the quartermaster charged with supplying the transportation arranges with the railroad authorities for the necessary cars. He procures lists, with weights, of all property to be shipped and makes out the bills of lading. He provides loading facilities and material for blocking and lashing, and constructs the necessary ramps.

Upon arrival of the cars, the quartermaster inspects to see if they conform to the terms of the contract, and reports the result of his inspection to the commander.

Stock cars are inspected with especial care to see that they are all in good order throughout. Projecting nails, bolts, and splinters, loose boards and rotting flooring, broken fixtures on hayracks, doors, or troughs, all are sources of danger or discomfort to the animals and of loss to the Government. The cars should be clean before loading, and suitable bedding provided.

Passenger cars must be clean, fully supplied with water and ice, and sufficiently lighted and heated. The urinals and closets must be in good condition, well supplied with toilet paper and water, and the sleeping accommodations according to contract.

Each train should be equipped with water buckets, lanterns, axes, and crowbars.

After the cars have been accepted, the number of men allotted to each is marked on the side or steps. The cars are then assigned to organizations and plainly marked.

246. Loading and Entraining.—At the proper time loading is begun and carried on, usually by the troops, pursuant to the orders of the commander. Heavy property may be loaded by details before the arrival of the troops.

The following order is generally observed in loading:

1. Company property, etc., not used in transit (in box cars locked and sealed by railroad employees prior to departure of train):
   Company property.
   Property of officers and men.
   Ammunition.
   Rations.
   Sanitary stores.
   Tentage.
   Cooking utensils.
   Arms and equipment of men when not carried in coaches or baggage car.
2. Transportation (on flat cars):
   Guns and artillery carriages.
   Pontons.
   Wagons, etc.
   Ambulances.
3. Forage (in box cars).
4. Checkable baggage, rations for use en route and arms (in baggage and kitchen cars under guard).
5. Animals (in stock cars).
6. Men (in coaches or sleepers).

Artillery and other carriages are made secure by lashings and by nailing blocks of wood to the flooring under the wheels.

The arrival of troops at the station should be timed so that there will be no delay in waiting for cars. When the barrack, camp, or bivouac is not more than a mile from the station, troops are not required to fall in until notice has been received from the quartermaster that the cars are at the station and have been inspected and assigned. The command is then marched to the train and the property loaded. The organizations are then marched opposite their cars and entrained. The cars are entered simultaneously, each company commander distributing his men according to the assignment. Noncommissioned officers have seats near the doors.

Troops traveling by train seldom require their arms or all of their equipment. For instance, when sleepers are provided, they generally require no equipment other than their canteens and haversacks, the mess kits and necessary toilet articles being carried in the latter. For mounted troops the saddlebags take the place of haversacks. A few revolvers or rifles suffice for the necessary guard duty. Therefore, to add to the comfort of the men, train commanders may cause the arms and equipments not required en route to be properly secured and stored in a property or baggage car.

Mounted troops dismount upon arrival and remove the horse equipments except the halter. Each man's equipment, except halter, canteen, and saddlebags, is then securely tied in a gunny

sack (or other receptacle supplied by the Quartermaster's Department), marked with the number of the man and letter of his troop, and loaded in the proper car. Each troop, except the horse holders, is then marched to its cars where the men deposit their arms (if not otherwise disposed of), canteens, and saddlebags. It then marches back, relieves the horse holders, and loads the horses. The horse holders, unless otherwise ordered, repair to their cars, carrying their arms (if left with them), canteens, and saddlebags. For short journeys the horses may be loaded saddled (stirrups crossed) and bridled, or the bridles may be tied on the saddles.

In the field artillery a similar method is pursued. The harness is usually tied up in sets, plainly marked, and loaded in a box car.

Animals can be conveniently loaded through chutes of stock yards, or from freight platforms level with the car floors. In other cases portable or improvised ramps will have to be used. When it is likely that the animals will have to be unloaded at places without facilities, one or more portable ramps, or material for improvising them, should be carried on the train. The loading should proceed without noise or confusion, the animals being led quietly to the car door and turned over to the four men, two for each end, who do the loading. The animals should be packed as closely as possible, except in very hot weather. Halters are not removed. Gentle animals should be placed opposite the doors and are therefore loaded last.

The *time* required for loading each train depends upon the railroad facilities and upon the experience of the troops. For troops leaving station to go into the field, or changing station in the field, the time required should not exceed:

One hour for infantry.
Two hours for cavalry and light artillery.
Three hours for heavy artillery and for engineers with bridge train.

All movements of the troops in loading, entraining, and detraining, feeding and watering, and exercising men and horses are made, as far as practicable, in military formation and pursuant to command, thus avoiding confusion and saving time.

247. Conduct of the Troops.—Delays caused by the troops, whether in loading and entraining or during the journey are inexcusable. They interfere with railroad schedules and are a source of great annoyance.

The railroad employees and subordinate officials have nothing to do with the questions of military discipline and administration.

Requests or complaints that they may have to make should be addressed to the station agent or to the conductor of the train for transmission to the commander.

The troops on their part must not interfere with the operation of the railway service. Officers and enlisted men give no orders to employees, and protests, complaints, and arguments are strictly prohibited. The commander is the sole intermediary between the troops and the railroad personnel. In case of deficiencies and other matters requiring correction, he addresses himself only to the official in charge.

The senior noncommissioned officer in each car is responsible for cleanliness and good order. Spitting on the floors, defacing woodwork and windows, and every species of disorder must be prevented.

The commander may station sentinels at the doors of each car to prevent the entrance of unauthorized persons and to keep soldiers from riding on the steps, platforms, or tops of cars, and from leaving without permission. If it is desirable to exercise the troops, they should leave the cars in a body, under their officers.

Smoking is prohibited in cars loaded with animals or forage.

Careful attention is paid to the *messing* of the men, whether in kitchen cars or in the coaches where the men ride. A mess officer supervises the preparation and serving of the meals and requires the men to keep their mess kits scrupulously clean.

The commander causes frequent inspections to be made to see that his instructions for the preservation of cleanliness and good order are fully carried out.

When the stock cars provided are such that the animals can be fed and watered on the trains, it is unnecessary to unload them for exercise or recuperation unless the weather is very hot and the journey long. Should the railroad company insist upon unloading the animals in compliance with the law, the commander will, in time of peace, give the necessary order.

On occasions when troops have been allowed or required to leave the train for exercise or duty, the commander will cause the "assembly" to be sounded five minutes before departure.

248. Detraining and Unloading.—The train *schedule* is arranged, when practicable, for arrival at destination in the morning. The troops are notified in time to prepare for detraining.

The officers and guard are the first to leave the cars. The commander meets the staff officer sent to the train, receives instructions,

if any, gets his bearing, and orders the troops to detrain. As soon as the passenger coaches or sleeping cars are empty, the quartermaster, or a specially designated officer, accompanied by the conductor, if practicable, makes an *inspection* of the cars and notes their condition; the result is reported to the commander.

The troops procure their field kits and march to camp without delay, leaving details to bring up the property. If the camp is distant, arms are stacked and a part or all of the command unloads the train.

In the *cavalry* the men are marched to the vicinity of the stock cars, where the saddlebags and canteens are placed in line on the ground under guard. The remaining articles of the field kit and horse equipments are then unloaded and placed with the preceding articles. The horses are then unloaded, saddled, and the troops formed.

Animals are unloaded quietly, each one being led to the opening so that his body will be athwart the car before leaving it.

The command may be marched to camp at once, if near the station; otherwise picket lines are stretched, or the horses are held while the property is unloaded.

Artillery unloads in a manner similar to that of cavalry.

On account of accidents, freight blockades, or action of the enemy, it may be necessary to unload in the open country. In such cases portable or improvised ramps will have to be used. Lacking these, the train may be stopped in a low cut, and cross-ties, baled hay, car doors, and turf utilized for the rapid construction of ramps of sufficient height to permit unloading of animals.

Transportation by water.

249. Transportation of troops, etc., on *inland waters* is comparatively limited, and is generally the subject of special arrangements with steamboat companies.

At sea, transportation is effected by the Army Transport Service, a special branch of the Quartermaster's Department.

The necessary preliminaries before embarking, and the routine details on board army transports are prescribed in the Army Transport Service Regulations. A copy of these regulations will be furnished the commander of each organization designated for oversea service.

NOTE.—For table of weights and measures see Appendix F.

ARTICLE IX.

COMBAT.

GENERAL PRINCIPLES.

250. In combats troops act either on the offensive or defensive. *Decisive results are obtained only by the offensive.* The defensive is therefore adopted, ordinarily, as a temporary or local expedient only, the eventual assumption of the offensive being kept constantly in view.

251. Advantages of the Offensive.—The commander has the great advantage of the initiative. He has a specific object, whereas the defender has only the general object of repelling his adversary. He can make feigned attacks against various parts of the enemy's position, or occupy him all along the line, while massing superior forces against a single point. The defender, on the other hand, must meet the decisive attack wherever it may fall. The assailants have the confidence of their numerical and moral superiority. When the die is cast and the attack is on, they no longer meditate upon the consequences; they look forward, not backward. The defenders, shaken by superiority of fire and seeing the steady advance of the enemy, foresee the effect of impending contact and of the resulting enfilade or reverse fire, and seldom wait for the final onslaught. The defender's whole line generally gives way as soon as it is turned or penetrated.

Increased rapidity, accuracy, and range of small arms have increased the difficulties of a frontal attack. Without superiority of fire we may assume the frontal attack as impracticable. If we consider two lines as consisting of infantry only, this superiority cannot be secured unless the number of rifles put into action by the assailants is either greater than the number opposing them, or the assailants are decidedly better shots or more skillful in the use of cover than the defenders, or the latter are surprised or have

been demoralized by previous defeat and the assailants have an unquestioned moral ascendency over them. Frontal attacks are not impossible, but in order to be successful the assailants must gain a superiority of fire and be willing to pay the price of victory.

Nearly all the factors that make frontal attack difficult inure to the advantage of the offensive in enveloping and flanking attacks. For example, the longer the range of weapons, the greater is the capacity for converging fire on salients of the enemy's line; and the neutral color of uniform which hides the defenders, also favors the assailants by concealing their turning movements.

While the improvement of small arms has benefited the defensive, improvement of field artillery has increased the advantages of the offensive, whether in frontal or flank attacks. The great range and rapidity of fire of field artillery, and its ability to fire while concealed, enable the assailants to accumulate a crushing superiority at the desired point without discovery by the defenders, to open an accurate and overwhelming fire as a surprise, and thus to acquire an ascendency that becomes more pronounced as the power of that arm increases.

It is impossile to shoot an enemy out of a position. To avoid serious losses, the defender has only to lie down behind cover; but a resolute and simultaneous advance on the front and flank of a position, made after thorough preparation by and with the effective accompaniment of artillery and infantry fire, will generally be successful.

252. Advantages of the Defensive.—The commander has the choice of position. This can be selected to afford shelter for the defenders and compel the assailants to pass over open ground where they may be subjected to heavy fire. The strength of the position can be increased by field fortifications. Trenches can be concealed and the enemy subjected to a fire, the origin of which is difficult to determine. They can also be made untenable for the assailants by arranging for enfilade and cross fire from other works in rear. Ranges in the foreground can be measured and marked, ample supplies of ammunition, water and food provided, roads opened, and an efficient system of observation and of transmitting information established. The defenders are under better control and their fire can be easily concentrated on important objectives. Their aim ought to be better than that of the assailants who cannot, as a rule, fire their rifles from a rest, and who, moreover, are unsteady from the exertions of the advance. And, finally, the losses

of the defenders, who are generally behind cover, ought to be small compared with those of their opponents who must pass over open ground.

253. Preliminaries.—Combats are generally preceded by those operations that enable a commander to locate the enemy's main body and gain some advantage of position. These preliminaries begin with the action of the independent cavalry, or other reconnaissance, and culminate in the contact of the advance guards.

254. Fire.—In fire combats the commander endeavors to secure a *superiority of fire* over that of the enemy.

The *efficacy* of fire depends mainly upon its accuracy, its direction with reference to the objective (frontal, oblique, enfilade, etc.) and its volume. Accuracy of fire is influenced by many considerations, such as the nature of the ground, the weather, physical condition of the soldier, skill in estimating or measuring ranges, ability to observe the effect of fire, etc., but chiefly by the character of *fire discipline* in the command. The direction of fire depends upon the skillful placing of the troops. The volume depends upon the number of rifles or pieces in action, and the rapidity with which they are fired. The rapidity, however, should not exceed certain limits. Beyond these limits the accuracy (and therefore the efficacy) of the fire is diminished.

As conditions are never the same, no fixed rules for attaining a superiority of fire can be laid down beyond the necessity of securing the greatest volume of effective fire possible. This is of great importance, for it is certain that an advance against even an inferior force has little prospect of success without the preparation and assistance of superior fire.

Concentration of superior forces at decisive points within effective range is the first requisite to securing a superiority of fire.

255. Ranges.—For convenience of reference ranges are classified as follows:

Range.	Rifle.	Field artillery.	Heavy artillery.
	Yards.	*Yards.*	*Yards.*
Distant	Over 2,000	Over 4,500	Over 6,500.
Long	2,000 to 1,200	4,500 to 3,500	6,000 to 4,000.
Effective	1,200 to 600	3,500 to 2,500	4,000 to 2,500.
Close	Under 600	Under 2,500	Under 2,500.

The ground covered by a shrapnel is elliptical in form and at the effective ranges does not exceed 300 yards in depth by 25 in width.

256. Intrenchments.—Intrenchments are used both on the offensive and on the defensive whenever circumstances permit. The cover provided by intrenchments is a defensive weapon of which full use should be made by commanders of all grades on their own initiative. The intrenching tools provided for infantry form a part of the combat equipment of that arm, and are invariably carried into action.

The primary object of intrenchments on the defensive is to enable a comparatively small part of a command to hold an extended front in order that the remainder may be available for offensive operations. It is therefore essential that higher commanders realize the full possibilities of field intrenchments and that subordinate commanders be prepared to construct and man them in the shortest possible time.

257. Combats of any magnitude generally involve the different arms. All officers, therefore, should have not only a knowledge of the effect of rifle and artillery fire and of cover, but of the general principles governing the tactical employment of the several arms.

THE OFFENSIVE.

Plan and conduct of attack.

258. The first duty of the commander is to ascertain the strength and position of the enemy and then to form the *plan of attack.*

On the offensive, combats are generally waged in accordance with the following *plan*, and the distribution of troops is made accordingly:

1. To attack the enemy vigorously with troops enough to compel him to take up a defensive position, and there to inflict losses, force him to bring up his reserves and to disclose the weak points of his line; at the same time to withhold the remaining troops under cover, a part for a general reserve and the rest for a powerful effort at the decisive point, keeping the enemy in doubt as to where the decisive blow is to fall. This is the *preparatory stage.*

2. To make a powerful effort at the decisive point with the forces withheld for that purpose. This is the *decisive action* or main attack.

3. To employ the general reserve to complete the action and, with all available troops, make a vigorous pursuit, or to avert disaster in case of failure. This is the *final stage*.

These phases are not always fully developed. The preparatory stage may be brief and be at once followed by the main attack; or the enemy may be surprised, or inferior numbers may be overwhelmed before support can reach them. In general, however, when large forces are engaged, the combat takes the course indicated.

259. Having decided upon the plan of attack, the commander issues the necessary *attack order*. As a rule this order is not issued until the time for action is near. The plan of attack is then rapidly disseminated throughout the command.

This order designates the troops that are to take part in the preparatory stage, those that are to make the main attack, those that are to form the general reserve, and gives them the necessary instructions. It also prescribes, so far as practicable at this time, the duties of the engineer, signal and sanitary troops, and of the trains.

It is not always possible to issue a complete attack order before beginning the combat, but to secure prompt and thorough cooperation it is made as complete as circumstances permit. In unexpected encounters orders are given as the situation develops.

260. Preparatory Stage.—After the enemy has been encountered, his main position must be developed. Before this stands revealed, serious fighting, such as capturing detached posts and salients, forcing back the enemy's advanced troops, etc., may be necessary. This is the work of the preparatory stage. Attacks in such cases usually follow the general plan outlined above.

As the opposing forces come in contact, the *cavalry* usually transfers its activity to the flanks, where it continues to observe the enemy, drives off his cavalry, menaces his flanks, and takes advantage of every opportunity for action. A cavalry reserve may be held in a position from which it can rapidly reinforce any part of the line.

Cavalry operating against the flanks or rear of an enemy employs mounted or dismounted action, or both, according to the situation. Surprise is the object. If cavalry is to fight dismounted, it is pushed while mounted close to the enemy, and then every rifle possible is placed upon the firing line.

Against infantry the most favorable occasions for the cavalry charge are when the infantry is out of ammunition, in retreat, or badly shaken by artillery or infantry fire.

The most favorable time for cavalry to charge artillery is when the latter can be taken by surprise, especially while limbering and unlimbering, or when it can be struck in flank or rear and is not adequately supported by other troops.

Combats are generally opened by the *artillery*. As the effect of shrapnel falls off rapidly at ranges much beyond 3,000 yards, the artillery, guarded by other troops, is pushed forward to within 3,000 yards of the hostile position, if practicable, but not in effective range of the enemy's infantry. As a rule its objective is that part of the enemy's forces inflicting the greatest damage to the infantry; it opens fire, therefore, when it becomes necessary to assist that arm, the first target usually being the hostile artillery. However, if enfilade fire or fire on masses or on hostile artillery can be effectively used, artillery may open when such opportunities present themselves.

To keep artillery commanders informed of the progress and needs of the advancing infantry, both in the preparatary stage and during the main attack, artillery officers or scouts generally accompany the commanders of the attacking lines. They communicate with the artillery commanders by wire or signals.

The principal work during an attack is done by the *infantry*. Assisted by the artillery, it works its way from point to point towards the assigned objective.

During an attack commanders endeavor to maintain a *superiority of fire*. This generally requires the placing of as many rifles as possible on the firing line, assisted by both artillery and infantry firing from position. At parts of the front where serious attack is not intended, thin lines of skirmishers well supplied with ammunition may be employed, but in serious attacks heavy lines and a large expenditure of ammunition are necessary. Supports to feed the firing lines follow under cover as near the lines as possible, and local reserves are held at suitable points to defeat possible counter attacks of the enemy. The attacking troops intrench, if necessary, as they gain ground to the front, and finally face the enemy in his principal position at sufficiently close range and in ample force to hold him there.

Subordinates to whom intermediate objectives, or sections of the line, have been assigned are allowed freedom of action to enable them to seize every opportunity for gaining ground to the front, but they must not count on receiving assistance. The commander may reinforce parts of the line which prove to be important, or he may withdraw local reserves and there prescribe a defensive attitude, simply holding the captured ground.

During the preparatory stage the *engineers* open roads to facilitate lateral communication and to enable the artillery to move rapidly to the front when an advance of that arm becomes desirable.

The *signal troops* establish lines of information connecting, generally, the supreme commander with the divisions, with the commander who is to conduct the main attack, with the reserve artillery, and such other lines as may be necessary to secure prompt and thorough cooperation throughout the command. Division commanders are generally connected with their brigades and with their artillery.

Aerial reconnaissance is maintained, if practicable, and captive balloons are used to give timely warning of any hostile movements. As soon as required, *dressing stations* are established, *field hospitals* set up, and arrangements made for the prompt removal of the wounded.

The *ammunition trains* are brought as far to the front as practicable, and steps taken to replenish the ammunition of the troops engaged.

The *field* and *supply trains* are stationed beyond the zone of conflict and where they will not interfere with the movements of the troops. The *pack trains* are generally utilized to facilitate the ammunition supply, and, in combats extending over several days, to assist in the distribution of rations.

The preparatory stage may thus last for hours, and in great battles may even extend through several days with continually increasing demands upon the troops.

261. Decisive Action.—During the preparatory stage the commander determines the point of the enemy's line, where the main attack is to be made. This point is generally a weak flank of the position or a weak point in the line. If a flank is decided upon, the one nearest the enemy's line of retreat is preferable, other things being equal. If a point of the front is chosen, it should allow the massing of the attacking troops under cover near the point to be attacked, and the concentration of a heavy artillery fire.

The *infantry* withheld for the main attack should be fresh, and its appearance as it begins the final advance, a surprise. It is moved, therefore, so as to escape observation, by night if necessary, and established under cover as near the point of attack as practicable. This is called the *position of rendezvous*. *Artillery* to assist in the main attack is placed so as to bring, at the proper time, a heavy fire on the objective. If the enemy's flank is to be enveloped, *cavalry* protects the outer flank of the attacking infantry, repels hostile cavalry, and operates against the flank and rear of the position.

When the infantry is ready to advance a powerful fire is concentrated upon the point of attack by all the available artillery and position infantry in range; at the same time the fighting all along the line is pushed with the utmost vigor, not only to prevent the enemy reinforcing the decisive point, but if possible to break his line at some other point that may happen to be weak. Under the protection of this fire the attacking infantry begins its advance and moves straight upon the objective, as rapidly as possible, consistent with maintaining the integrity of the attacking line and the vigor of the troops. That the troops may be encumbered as little as possible the packs may be left at the rendezvous position. The attack once begun, the sole thought of every officer and man engaged should be the capture of the enemy's position. The sooner this is accomplished the fewer will be the losses. The selection of the moment for beginning the movement is the duty of the supreme commander. If begun too soon, it may fail from lack of preparation; if too late, the enemy's reserves may be able to reinforce the threatened point and turn the tide of victory or night may stop the conflict.

The infantry assault.—The infantry assault is generally made as follows: From the rendezvous position an *attacking line*, strong enough to form the necessary *firing line* and *supports*, is sent forward. The remaining infantry forms a *reserve* to be used according to the exigencies of the situation. If long, the attacking line may be divided into sections and an objective, or direction of advance, assigned to each. This enables the commander of each section to take full advantage of the terrain. Until fire is to be opened, the attacking line *advances in any formation* that minimizes loss and occasions no unnecessary delay.

The commander of the attacking line determines when fire is to be opened and forms the firing line accordingly. Where the firing

line is formed is called the *attacking position*. If the attacking line is divided into sections, the commander of each section, in the absence of instructions, selects the attacking position for his section and decides when the latter shall open fire.

To secure and maintain a superiority of fire, the firing line is made as dense as possible (about one man to the yard), consistent with effective work by each rifle, and the losses are constantly replaced from the supports, the latter following closely under such cover as the ground affords. At the attacking position the supports form one-fourth to one-half of the attacking line.

The infantry rarely opens fire until well within effective range of the hostile infantry, but from that moment its fire, assisted by that of the artillery and infantry firing from position, must be superior to the enemy's fire or success can not be assured. This requires a constant fire from the advancing line. To maintain this fire, avoid heavy losses, and at the same time continue the advance, ground to the front is gained by rushes of parts of the line varying from battalions to individuals, according to the intensity of the enemy's fire. The rushes are made so as to take full advantage of available cover.

The reserve follows the firing line as long as it can find cover. A second line is then formed and sent forward in time to join the attacking line in the final assault and to secure the captured position. The remainder of the reserve follows to assist in repulsing an offensive return or to complete the rout of the enemy. Whenever the terrain permits, the reserve may support the attacking line by firing from elevated positions in rear.

If the attacking line is temporarily checked, the intensity of the covering fire must be increased to keep down the fire of the enemy.

As the attack progresses part of the artillery may be sent forward to a better position, but it must be remembered that during such change of position the fire of that artillery is lost to the assailant.

As the attacking line nears the danger zone of the covering artillery, the latter increases its range so as to impede the movements of possible hostile reserves and to spread confusion in rear of the enemy's position. Under favorable conditions the artillery can continue its fire on the enemy's position until the advancing infantry is about 300 yards therefrom.

When the attacking line arrives within charging distance of the enemy's position, it opens a rapid fire and then charges with fixed

bayonets. The second line joins in the charge, adding to its impetus, and furnishing the numbers to decide a possible hand-to-hand conflict.

Should the attacking line be stopped by the enemy's fire, it intrenches and waits for the second line or for a favorable opportunity to continue the advance. The commander may decide not to send forward the second line until night, deferring the assault until then or daybreak the following morning. Engineers may be required to assist in removing obstacles. To cut wire entanglements, portable metal, or other shields may be necessary.

Commanders should not hesitate to use the general reserve during the decisive action, if such use will contribute to the ultimate defeat of the enemy.

262. If the enemy is under cover that can be reduced by artillery fire, the infantry attack is generally preceded by an *artillery preparation* sufficient to reduce the hostile works.

On the other hand, if the enemy's works—whether simple trenches or more elaborate fortifications—cannot be reduced by field artillery, the fire of that arm has little effect until the infantry advance compels the defenders to expose themselves.

When works cannot be captured by open assault, the infantry advances by the slow and tedious process of siege operations.

263. Final Stage.—As soon as a position is carried, steps are taken to hold it against an offensive return. Artillery is hurried forward and the troops, disorganized by the assault, are at once reformed. Strong points are occupied, available cover utilized, shelter trenches constructed, if practicable, and a defensive attitude assumed as quickly as possible. The course of events will soon indicate whether the enemy has definitely abandoned the position or not. As long as there is danger of an offensive return, strengthening the position must continue.

264. The Pursuit.—No victory is complete without a resolute effort to reap its fruits to the fullest extent. The infantry and artillery seek positions from which they can fire on the retreating forces and prevent their taking up a new position or forming a rear guard. All available forces pursue. The cavalry acts with the greatest boldness and energy, using mounted or dismounted action, according to the situation. If it cannot intercept the retreat, it attacks the enemy's flanks, compelling him to deploy and bringing him under the fire of the pursuing infantry and artillery. In the

absence of orders, cavalry leaders act on their own initiative, but they must never lose contact with the retreating enemy.

265. Action in Case of Repulse.—*Ground once gained should not to be abandoned until all hope of final success is gone.* The arrival of reinforcements or events in other parts of the field may decide the commander to repeat the assault; the ground held may then afford a starting point for renewed efforts.

Losses in retreating over a fire-swept zone are greater than during the advance. If the main attack is effectually stopped, either by obstacles or the enemy's fire, or both, the troops remain where they are, under such cover as the ground affords or they can improvise, until night, the withdrawal being then effected under cover of darkness. If withdrawal has to be made under fire, it is done by parts of the line falling back under cover of the fire of the remainder.

If the enemy assumes the offensive and makes a counter attack, troops still intact form a defensive position behind which the defeated troops rally. If the situation is critical, the cavalry may be thrown in to check the enemy's advance, and the artillery continues its fire to the last moment regardless of the risk of losing guns, the object being to gain time for the infantry to reform.

Night attacks.

266. Night operations are generally undertaken:

1. To seize a position prior to its occupation by the enemy.
2. To gain ground over a fire-swept zone.
3. To reach a position from which to deliver an assault.
4. To make an assault with minimum loss.
5. To effect a withdrawal.

267. When a night attack is contemplated, a thorough reconnaissance is made, by night as well as by day. If intrenched positions are to be assaulted, engineer officers accompany the reconnoitering parties.

Night attacks are made mainly by infantry. Engineers are added when obstacles are to be removed or surmounted. Cavalry and artillery are placed in readiness to begin operations at daybreak. To deceive the enemy and create confusion and alarm, demonstrations and false attacks may be made against other parts of his line. The troops that are to make the assault are provided with conspicuous badges and given a watchword.

The attacking force should not be so large that it cannot be conveniently handled. A powerful and sustained effort at a single point carefully selected beforehand, coupled with false attacks to deceive the enemy, is preferable to real attacks made at several places or all along the line.

If not already in a position from which the assault can be made, troops detailed to make a night attack are first assembled at a *rendezvous position* and then marched to the *attacking position*, where they are deployed, detailed instructions given, and dispositions for the attack made. If practicable, the troops are assembled before dark. The attacking position should be easy to recognize (elevated positions are favorable) and far enough from the enemy to prevent his discovering the movement. The compass bearing of the point of attack from the attacking position should be known. When everything is in readiness the troops advance from the attacking position, secretly and silently, with pieces unloaded and bayonets fixed. When the attacking lines become engaged, the supports are pushed in and every effort made to carry the hostile position. As far as practicable roads and other avenues probably commanded by the enemy's artillery, are avoided.

When night operations are contemplated, every precaution is taken to prevent information reaching the enemy. The orders are issued only in time to permit the preliminary arrangements to be made, and all subsequent movements of the attacking force are made quietly and without confusion.

CAVALRY VERSUS CAVALRY.

268. The functions of cavalry in war involve frequent collisions between hostile forces of that arm. Especially is this true of independent cavalry covering an advance. While incidently screening the command of which it forms a part, the first duty of such cavalry is to locate the enemy's main body; but the enemy's cavalry generally bars the way. *Therefore, the most effective method by which the independent cavalry can perform such duty is first to defeat the hostile cavalry.* This implies reconnaissance, maneuvering for position, numerous small cavalry encounters, all finally culminating in a fierce combat between the main bodies of the opposing cavalry.

269. Cavalry possesses the following methods of fighting:

1. *The mounted charge*, alone, or supported by artillery or by dismounted fire action, or by both.

2. *Dismounted fire action*, offensive or defensive, alone or in combination with artillery.
3. *Mounted fire action* in exceptional cases.

In combats where mounted cavalry operates offensively, the result is decided by the mounted charge. In such cases the preliminary maneuvering for position is the *preparatory stage*, while the charge is the *decisive action* or main attack; what follows is the *final stage*.

270. When a commander of independent cavalry has decided to attack the hostile cavalry, he causes a *thorough and rapid reconnaissance* to be made and recalls all detachments within reach. Every available man must be present at the final collision. Detachments return of their own accord when satisfied that the decisive combat is imminent. When the opposing forces are in close proximity, officers are sent to reconnoiter in pairs, one returning and reporting verbally when definite information is obtained. Such officers are provided, if practicable, with rough outline maps of the intervening country. On these maps they note the position of the enemy and principal features of the terrain.

271. As soon as the advance guard has been checked by the enemy, the commander decides upon the *plan of attack* and issues the necessary orders.

The plan of attack is generally as follows:

The advance guard and horse artillery, with the troops assigned to support the latter, engage the enemy as a retaining force and form a pivot or base upon which the cavalry that is to conduct the charge or main attack, maneuvers. The machine guns of the cavalry that is to make the charge usually join the artillery support. A general reserve is maintained.

It is impossible to lay down fixed rules for the conduct of the troops that are to make the charge. They remain screened from the enemy's view as long as possible, and if practicable are maneuvered so as to bring his cavalry between his artillery and the point of collision, or so as to strike him in flank or in some situation unfavorable to him. *Combat patrols* determine the exact position of the enemy, and *ground scouts* give timely warning of the nature of the ground over which the troops are to pass. At the rendezvous position the cavalry is divided into an attacking line and reserve. The attacking line, if practicable, should be stronger and cover a greater front than the enemy. It is ordinarily divided into a charging line and support, the latter generally following a short distance in rear of the least exposed flank of the charging line.

The reserve is generally divided into two parts, the larger part, or second line, following about 400 yards in rear of the most exposed flank of the attacking line and completing the work begun by the latter. The remainder of the reserve is held intact until the last moment and is then used according to the situation.

Before reaching the attacking position (where the charging line is formed), the troops generally move in column of fours, or in a line of such columns with deploying intervals. This permits ready changes of direction, the troops conforming to the direction taken by the chief who leads. The gait should permit the troops to arrive at the attacking position full of vigor and in good order.

The charging line is formed at the latest moment consistent with delivering the charge with the greatest momentum possible. If formed too soon it will lack cohesion; if too late, the necessary momentum cannot be attained. The distance from the enemy varies from 400 to 600 yards. After the charging line is formed it advances with steadily increasing gait to about 80 yards from the enemy, when the *charge* is delivered with all the speed possible, the line being kept intact—the troopers boot to boot.

During the advance the artillery endeavors to break the enemy's formations at the point of attack, using as many guns as can be spared from the action with the hostile artillery.

The general reserve follows the movement and is used at the critical moment, according to the situation. If the enemy is defeated, the general reserve completes the action and takes up the pursuit.

Should the charge be repulsed, the defeated troops rally under cover of the horse artillery and troops holding the pivotal position, and oppose the further advance of the enemy.

When the ground does not permit the attacking cavalry to charge as *one mass*, the different bodies advance simultaneously from their rendezvous positions, each upon its proper objective.

272. The most favorable opportunities to charge cavalry are (1) when it can be caught in the act of dismounting to fight on foot, (2) when it can be surprised in column and struck in flank, (3) when it can be taken in flank while charging another body, (4) when it can be struck while changing formation, and (5) when it can be struck issuing from a defile.

If conditions are favorable, dismounted fire action is combined with the mounted charge, thus uniting the shock action of cavalry with the fire of infantry.

THE DEFENSIVE.

Plan of defense.

273. The defensive having been decided upon, the first duty of the commander is to select the *best position available*, consistent with strategical requirements and the general plan of operations. The defensive position is generally first chosen upon information furnished by maps. If possible, a reconnaissance should be made by the commander in person, accompanied by officers of the general staff, artillery, and engineers.

274. The Position.—A defensive position should possess as many of the following features as possible:

1. A good view of the front and flanks, and within the position itself.
2. A good field of fire to the front and flanks.
3. Ground suited to the size of the command, with good communications laterally and to the rear, and with an ample supply of good water.
4. Shelter from the enemy's fire and concealment from view.
5. Ground in front that will impede the assailants without furnishing them cover.
6. Flanks easily protected.
7. Ground favorable for making local counter-attacks and offensive returns, and for assuming the offensive.[a]
8. A location that will compel the enemy to attack the position or abandon his advance.
9. A line of retreat running straight to the rear from the center of the position. If a flank position parallel to the enemy's line of advance is assumed, the flank nearest the enemy should rest on an impassable obstacle, and the line of retreat should be perpendicular to the front for some distance in rear of the position.

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[a] A *counter-attack* is directed against the enemy's attack; that is, it meets him before, or at the moment of arrival at the defended position. The term is also applied to an attack made after a prior defensive attitude and directed against troops not previously engaged, for example, in turning the flank of an attacking force. This is called the decisive counter-attack, although, properly speaking, it is the assumption of the offensive.

An *offensive return* consists in the assumption of the offensive by the defender with the object of recovering ground just captured by the enemy, and of returning to the original position.

Salients in a position, especially if exposed to a concentrated artillery fire, are a source of weakness. If occupied they should be strongly fortified, and flanked by artillery and infantry fire.

Weak flanks must be made strong either with obstacles and defensive works, or with troops enough to withstand the probable assaults of the enemy.

275. The general position having been selected, the commander forms his *plan of defense*, and issues the necessary order (defense order) for occupying the position. This order designates the general line of defense, divides it into *sections* if necessary, and prescribes the distribution and duties of the troops.

276. Distribution of Troops.—The principal factors considered by the commander before deciding upon his plan of defense are:

1. The directions in which the enemy may advance, the probable positions of his artillery, and the use that he may make of his cavalry.
2. The best method of occupying the position in order to check or defeat the enemy, and then to assume the offensive.
3. The lines of retreat to a new position, should the enemy's attack be successful.

The manner of occupying a position varies with the ground and the troops available. No fixed rules can be laid down, the only reliable guides being the commander's good judgment based upon his knowledge of the effect of fire and value of cover, and upon his appreciation of the moral ascendency gained by a timely assumption of the offensive. However, as thorough cooperation and a superiority of fire are as necessary to the defensive as to the offensive, the following general principles governing the distribution are applicable to most defensive positions:

Infantry.—The infantry is divided into the *fighting line* and *general reserve*. The fighting line occupies the line of defense and consists of:

The firing line.
Supports.
Local reserves.

The firing line, habitually intrenched, is placed so that its fire can effectively meet the enemy's advance, and provision is made to keep it as strong as possible, losses being constantly replaced from the supports. At dangerous points, where the nature of the ground permits, two or more firing lines may be used, thus furnishing banks or tiers of fire. On the other hand, some parts of the

line may be more easily defended than others, thus requiring fewer troops. Ground in front with much cover is specially watched, even if unfavorable for the enemy's operations. Dead spaces are swept with fire of special detachments.

To delay hostile reconnaissance of the main position as long as possible, advanced posts are sometimes established in front or beyond the flanks. *The retreat from advanced posts must not mask the fire of the main position.*

The supports and local reserves are as near the firing line as practicable and under cover, intrenchments with splinter-proof cover being provided if necessary. They should be in their positions when the combat opens.

The general reserve is usually posted in rear of the center, but it may be placed near a flank where a counter-attack is contemplated. Its position is concealed as long as possible.

As far as practicable, the positions of all reserves and their lines of advance are screened from view and fire, so that their action, which should be directed against the enemy's flank, may come as a surprise.

Artillery.—The artillery is posted so as to command the enemy's lines of approach and the probable positions of his artillery. So far as practicable, it is kept in concealed positions, or is screened from the enemy's view. It may be necessary for the greater part of the artillery to occupy a position in readiness until the plans of the enemy are disclosed.

Cavalry.—Some cavalry is posted near the flanks to observe the enemy and prevent hostile reconnaissance. The greater part, however, is generally held under cover in rear, and is used to operate against a flank of the enemy's advance, to delay a turning movement, to reinforce weak parts of the line with dismounted fire, or to cooperate with the general reserves in a counter attack. If superior to the hostile cavalry, it may be posted so as to threaten the enemy's line of communications.

Engineers.—The engineers are employed in opening roads, clearing the field of fire, constructing barbed wire entanglements, setting up and operating searchlights, and otherwise strengthening the position. Engineer officers outline the trenches and other works, and, if practicable, supervise their construction by the troops.

Signal troops.—The signal troops establish the lines of information indicated by the commander. Lines are generally run connecting the commander with each section into which the defensive

position may have been divided, with the artillery, general reserve, and cavalry reserve. Lines may be run connecting the commanders of adjoining sections. Captive balloons are stationed near the flanks to give timely warning of hostile flanking undertakings.

Sanitary troops.—Positions for first aid and dressing stations are selected, and arrangements made for setting up the field hospitals as soon as required.

Trains.—The trains are stationed at convenient places in rear where they will not interfere with the movements of the troops.

Strengthening the position.

277. The general position having been selected, every means available is employed to strengthen it. Before the work begins, the distribution of troops and the division of the position into sections (if any) will have been made. The troops assigned to defend a position should perform the work of fortifying it.

The defensive works of each section do not, as a rule, form a continuous line, but are arranged in groups so as to form a series of supporting points on the general line. The works of each group are arranged to provide frontal fire and fire to cover intervals between groups. Intervals between groups of works do not weaken a position, provided they can be covered by effective fire from adjacent works. If the enemy resorts to a deliberate method of advance, fortifying himself in positions gained, the intervals may be reduced or closed by interpolated works.

Groups of fortifications consist essentially of:

1. Trenches for the firing line (fire trenches).
2. Trenches for the supports and reserves (cover trenches).
3. Sheltered communications between the supports and firing line (communication trenches).
4. Obstacles.

Each subdivision of the fighting line provides its own cover. If reasonably good natural cover is available for the reserves, or if time is limited, they are employed to improve the field of fire and to construct communication trenches. Commanders fortifying a position estimate, according to the situation, the relative importance of the various features of the work—field of fire, cover, communications, etc., and conduct the work accordingly.

Fire trenches are placed so that the troops will not appear on the skyline, and are concealed as much as possible. When practicable,

they are made deep and narrow, so as to furnish cover against shrapnel fire. If time permits, splinter-proof cover is provided.

Trenches sufficiently in advance of the topographical crest to avoid the skyline are the most easily reinforced and such location is desirable if sufficient field of fire can be had. At the foot of the slope trenches are easily concealed and afford a grazing fire; on the other hand, the field of fire is apt to be limited, and they are difficult to abandon or reinforce unless covered approaches are provided. Trenches at the military crest[a] generally afford a good field of fire and can be easily reinforced or abandoned. They are, however, difficult to conceal and the fire is more or less plunging.

The most effective protection against artillery fire is concealment, and every effort is made to secure it. If possible, a prepared defensive position should be examined from the front to ascertain if proper measures for securing invisibility have been taken. Ranges should be measured and marked and troops made familiar with the distances. Dummy intrenchments may be used to deceive the enemy.

Extent of front covered.

278. The extent of front that can be covered by a command in an intrenched position depends primarily upon the terrain and the degree of resistance to be offered. In the temporary use of intrenchments the resistance offered must be sufficient to repulse an enemy in open attack, and the strength of the fighting line is gauged accordingly. In estimating the front that can be held against an ordinary open attack the calculations are based on the amount of of infantry available and may be roughly made as follows:

For a brigade of 4,500 men in the fighting line, one-third may be assigned to the local reserves—1 regiment of the brigade or 1 battalion of each of the 3 regiments. Six battalions, or 24 companies, will then be available for the firing line and supports. Each battalion or company furnishes its own support (ordinarily about one-fourth its strength). Assuming 100 yards as the average interval between adjacent companies and 150 yards as that between adja-

[a] The *military crest* is that part of a hill from which all or at least the greater part of the downward slope within range can be seen and subjected to direct fire. It generally differs from the actual or topographical crest, which is at the highest points or watershed.

For forms of trenches see Appendix G.

cent battalions, the total front covered by the brigade would be about 4,500 yards—approximately 2½ miles, or 1 man per yard.

On this basis the following figures show the maximum front that may be occupied under favorable conditions by a unit not acting alone or on the flank of a position:

	Yards.
Battalion intrenched	750
Regiment intrenched, one-third as regimental reserve	1,500
Brigade intrenched, one-third as brigade reserve	4,500
Division intrenched, 1 brigade as division reserve	9,000

With a division thus extended the active use of the general reserve is implied.

Conduct of the defense.

279. As the defensive is, in a measure, the counterpart of the offensive, it presents the same phases, viz, preparatory stage, decisive action, and final stage.

280. Preparatory Stage.—During the preparatory stage the enemy gradually forces back the defender's advanced posts. Whether the defender uses the artillery of his main position or not during this period, depends upon circumstances. Its primary functions are—

1. To keep down the enemy's fire, whether artillery or infantry, that is most damaging to the defense.

2. To inflict losses upon the hostile infantry, impair its morale, and delay or check its advance.

However, unless favorable targets are presented, especially for flanking, oblique or cross fire, or it becomes necessary to reply to the enemy's artillery in order to prevent too much damage from its unrestricted fire, it is generally preferable for the defender's artillery to remain silent, and thus avoid disclosing its position, until hostile infantry or artillery appears within effective range. On the other hand, if the defender's artillery is completely concealed, it may fire on the enemy whenever the probable effect will justify that expenditure of ammunition. Experience shows that the morale of an assailant is greatly impaired when he is subjected to losses inflicted by an enemy that he is unable to see, or whose fire he cannot return.

The foregoing principles apply, in the main, to the defender's infantry. So long as any advantage can be gained by remaining concealed or silent, the infantry withholds its fire, but if concealment is unnecessary, the infantry (assuming ammunition to be

abundant) may fire whenever an opportunity is presented for damaging the enemy, no matter what the range may be. Volley fire at long or even distant ranges and at suitable targets may be very effective. If the hostile artillery is firing on the trenches of the defenders, the latter expose themselves only when the enemy has advanced within effective range.

281. Decisive Action.—The defenders concentrate their fire on the advancing infantry, and make every effort to inflict losses and check his advance. As the crisis approaches, and there is a probability of the enemy reaching the position, the defender's artillery, irrespective of its own losses, devotes its entire attention to the advancing infantry. Machine guns properly placed and under cover are very effective.

Should the assailants succeed in gaining a position threatening the line of defense, a counter attack is made before the enemy can intrench. Local counter attacks are the special duty of the local reserves and are made upon the initiative of officers in command of sections of the defensive position. The troops do not pursue, but return to their positions after the enemy has been driven off. Should the enemy attempt an assault, he is met with rapid fire and a countercharge with fixed bayonets. Every available man is brought up, and the enemy struck in flank if possible. Should the enemy succeed in penetrating the line, he is driven from his position by an offensive return. The offensive return should come as a surprise and be assisted by artillery placed so as to fire upon the enemy's flank within effective range.

282. Final Stage.—Should the enemy's attack be effectively repulsed, it may be followed by local counter attacks, or by an assumption of the offensive, the general reserve striking the enemy's flank, and the reserve cavalry threatening his line of communications.

If the enemy abandons the offensive and begins a retreat, he is vigorously pursued, and every effort made to complete his discomfiture.

If the defenders are unsuccessful, they fall back to the next defensive position, if one has been selected, and there await the enemy. In such cases lines of retreat are chosen so that the retiring troops will not mask the fire of troops already in the new position. If a retreat is decided upon, a rear guard is formed and an orderly retreat begun.

283. Defense at Night.—Whenever practicable, the front and flanks of the position are covered with obstacles, and guns are placed so as to sweep the roads and open ground. Dismounted cavalry may be stationed as a reserve to the firing line, especially near the flanks. The outposts exercise the greatest vigilance, but care is taken not to mask the fire of the main position. Small patrols or other means of observation give timely warning of any hostile advance, and thus enable the defenders to prepare for a night attack, or an attack at dawn.

A POSITION IN READINESS.

284. A position in readiness is a position where troops are assembled, under cover, if practicable, and from which they can be quickly deployed, either for attack or defense, or marched in any direction demanded by the situation.

If it is probable that a defensive position will be taken up from a position in readiness, a part of the artillery and infantry is placed in the defensive position and preparations for defense are made; cavalry reconnoiters and the remaining troops are held under cover in rear.

ARTICLE X.

THE SANITARY SERVICE.

PERSONNEL, ETC.

285. In time of war the sanitary service includes:

1. All persons serving in or employed by the Medical Department, including officers and men temporarily or permanently detailed therein.

2. Members of the American National Red Cross Association assigned to duty with the Medical Department by competent authority.

3. Individuals whose voluntary service with the Medical Department is duly authorized.

286. Insignia.—In campaigns all persons belonging to the sanitary service, and chaplains attached to the army, wear on the left arm a brassard bearing a red cross on a white ground, the emblem of the Sanitary Service of armies. This brassard is issued and stamped by competent authority and is accompanied by a *certificate of identity* for persons who do not have military uniform. All *matériel* pertaining to the sanitary service is also marked with this emblem.

All sanitary formations or establishments display the Red Cross flag accompanied by the national flag. If a sanitary formation falls into the hands of the enemy it displays, while in such situation, the Red Cross flag only. At night the positions of sanitary formations are also marked by *green lanterns*.

287. Status.—All persons mentioned in the preceding section, and armed detachments or sentinels ordered by competent authority to guard sanitary formations or establishments, are respected and protected under all circumstances. If they fall into the hands of the enemy they do not become prisoners of war, but are disposed of as provided in article 12 of the Red Cross convention. The disposition of captured sanitary *matériel* is governed by the provisions of Chapter IV of the convention.

Medical Department.

288. Duties.—The Medical Department is charged with the *administration of the sanitary service.* Specifically its duties are:

1. The initiation of sanitary measures to insure the health of the troops.
2. The direction and execution of all measures of public health among the inhabitants of occupied territory.
3. The care of the sick and wounded on the march, in camp, on the battlefield, and after removal therefrom.
4. The methodical disposition of the sick and wounded, so as to insure the retention of those effective, and relieve the fighting force of the non-effective.
5. The transportation of the sick and wounded.
6. The establishment of hospitals and other formations necessary for the care of the sick and injured.
7. The supply of sanitary *matériel* necessary for the health of troops and for the care of the sick and injured.
8. The preparation and preservation of individual records of sickness and injury in order that claims may be adjudicated with justice to the government and to the individual.

In addition to caring for the sick and wounded, medical officers act as sanitary advisers of commanders and instruct the troops in personal hygiene. Beginning with camp sites and the water supply, they continue their supervision of these and other sanitary matters to the close of the campaign.

289. Organization.—In campaign the Medical Department is organized and distributed as prescribed in Article I. Sanitary troops, in addition to those serving with the organizations, are assigned to detachments as circumstances require.

290. Titles of Medical Officers.—The title of the senior medical officer of an army in the field, of the line of communications and of a division or separate brigade is "chief surgeon;" of a detachment, regiment, or smaller command, "the surgeon;" of a hospital or other sanitary formation, and of an ambulance company or detachment thereof, "commanding officer."

ADMINISTRATION OF THE SANITARY SERVICE.

291. Control.—The senior medical officer of an army or smaller command is charged with the general control of the sanitary troops serving therewith, and commands the independent sanitary units.

He may be authorized by the commander to make assignments of the personnel, and in emergencies the entire sanitary service of the command may be placed at his disposition.

292. Inspection.—Before troops are sent to camps of mobilization they are carefully examined to detect the presence of contagious disease, especially typhoid fever. Such examinations are made by medical officers of the Regular Army when practicable, otherwise by militia or volunteer medical officers, and the subsequent movements of the troops examined are contingent on the results of such examinations. Similarly, before taking the field the troops are again examined, and those physically unfit are excluded.

In campaign *sanitary inspectors*, on the recommendation of the Surgeon General, are assigned as follows: One to each division and as many as may be necessary to the line of communications, base of operations and home territory.

A sanitary inspector assigned to a command is charged especially with the supervision of the sanitation thereof.

It is the duty of commanders to remedy sanitary defects reported to them by sanitary inspectors. To facilitate the attainment of proper results in sanitary emergency, a sanitary inspector may be authorized by the commander of the unit to which he is assigned, to direct, in the name of the latter, and within such limitation as the commander may prescribe, the prompt abolition of conditions prejudicial to the health of troops.

Sanitary inspectors also inspect and report upon the administration of the medical department, the efficiency, instruction, and adequacy of the medical personnel, the condition of hospitals, the character and sufficiency of medical supplies, the facilities for transporting medical supplies and the sick and wounded, the occurrence of preventable diseases and the sufficiency of the measures taken for their prevention, and in general, upon all matters affecting the care, well-being and comfort of the sick and wounded.

293. Transportation.—During a campaign, transportation which properly pertains to the Medical Department is assigned to that department and will not be diverted therefrom by commanders subordinate to the one by whom such assignment was made, nor by officers of other staff departments. This includes ambulances, wagons and animals with their personnel, hospital trains, ships and boats, together with the crews for working such trains, ships, and boats.

Transportation for the temporary use of the Medical Department, including wagon and railway trains, boats, etc., is reported by the officer in charge to the senior medical officer, under whose orders such transportation remains until the special work for which it was assigned is completed.

Medical and other supplies for the use of the sick and wounded are transported, so far as possible, by the Medical Department with its own transportation. Supplies which cannot thus be transported are invoiced to the Quartermaster's Department for transportation, and their shipment is expedited as much as possible, ammunition and rations alone, as a rule, having precedence. When necessary, members of the Hospital Corps are detailed to accompany medical property.

When not otherwise provided for, repairs to transportation and the shoeing of animals are done by the Quartermaster's Department on request from the proper medical officers.

Each company unit is provided with a litter; on the march these litters are carried on the combat or field trains (sec. 234) or by men detailed for that purpose.

294. Special Details.—When necessary, commanders of separate commands may detail officers of the line or staff corps for duty as *quartermasters* or *commissaries* with the Medical Department, but enlisted men are detailed for duty in that department in cases of emergency only. Officers and men so detailed must be fitted for the duty required. Medical officers act as quartermasters and commissaries only when other officers are not available.

295. Guards.—When necessary, armed guards are furnished from the line for the protection of the sanitary service, and the personnel of the latter may also be armed and use its arms in self-defense or in defense of the sick and wounded. Field hospitals are habitually guarded by ambulance companies, guards from the line being detailed only when this is impracticable. Other sanitary formations are furnished guards by army, division, line of communications, or department commanders, as the case may be. When the commander of such a guard is a commissioned officer he confers with the medical commander as to the character of the guard duty desired by the latter, but exercises no control over the sanitary formation.

296. First-Aid Packets.—Before a command enters upon a campaign every member thereof is provided by the Medical Depart-

ment with a first-aid packet. Regimental and other commanders are charged with seeing that their commands are provided with these packets and that suitable instruction as to their use is given by the medical officers.

297. Identification Tags.—Before a command enters upon a campaign, every member thereof is provided with an identification tag by which he can be identified if killed or wounded. Regimental and other commanders are charged with seeing that their commands are provided with these tags in ample time, and that they are properly worn. Such tags are not removed from the dead, but are left on the bodies when interred or otherwise disposed of. Tags or other marks of identification found on dead bodies of the enemy's forces are disposed of as provided in articles 3 and 4 of the Red Cross Convention.

298. Care of Inhabitants of Occupied Territory.—When necessary to prevent the infection of the military forces from diseases prevailing among the inhabitants of occupied territory, the Medical Department will assume control of all cases of such diseases, and provide for their proper supply, care, and isolation.

When the military conditions in occupied territory are such as to imperil or impair the usual agencies of medical relief among the inhabitants thereof, the Medical Department may take such measures, not incompatible with the necessities of the occupying forces, as may be necessary to relieve the distress and suffering of the sick.

CONDUCT OF THE SANITARY SERVICE IN THE FIELD.

299. The sanitary service in the field is divided into:

1. Service with the mobile forces, including camps and bivouacs, marches and combats.

2. Service of the line of communications, including all sanitary formations not accompanying the troops.

With the mobile forces.

300. The sanitary formations accompanying the mobile forces are:

Ambulance companies.
Field hospitals.

Ambulance companies and field hospitals are not ordinarily attached to units smaller than a division. They receive their medical supplies from the sanitary supply depot at the head of the line

of communications, or from the reserve supplies accompanying the supply train.

301. Camps.—The ambulance companies and field hospitals generally encamp like a battalion of artillery, with the transportation between the units (sec. 186).

In camps, regiments establish regimental infirmaries and not hospitals. The infirmaries care for emergency cases and the slightly sick or injured—serious cases being promptly transferred to the field hospitals.

302. Marches.—Ordinarily, regimental medical officers march—the senior with the regimental commander and one in the rear of each battalion unit. Each officer is accompanied by an orderly. The remaining regimental sanitary personnel usually march with the battalion units. Each regiment is followed by an ambulance from the ambulance train. Unless otherwise ordered, these ambulances join their trains at the beginning of an engagement. If a regiment operates alone, it is accompanied by three ambulances.

The ambulance companies and field hospitals of a division generally march in rear of the division field train as follows:

Ambulance companies.
Ambulance company trains (in order of their companies).
Field hospitals—troops, wagons.

If an engagement is imminent, these organizations usually precede the division field train, and ambulance companies (less ambulances and wagons), or detachments thereof, follow the combatant organizations. For smaller commands the march of the sanitary troops is similarly conducted (sec. 151).

Sick and wounded falling out during a march are placed in the regimental ambulance; when this is filled they are assigned by means of diagnosis tags to the ambulance train or other transportation. Weak and foot-sore men may be relieved of their equipment and permitted to march in rear of the regimental ambulance.

A man falling out from sickness or injury is sent with a pass showing his name, company, and regiment or corps, to the medical officer in rear. The latter returns the pass showing the disposition made of the man.

The arms, personal equipment, and clothing of soldiers who fall out are carried with them.

The horse, saber, and horse equipment of a mounted soldier admitted to the ambulance, or otherwise disposed of, are taken

back to the troops by the noncommissioned officer that accompanied him.

Upon halting for the night all but the trivial cases are transferred to a field hospital or otherwise disposed of. Those unable to continue the march are transferred to evacuation or other hospitals, or left under shelter—in houses if practicable—with the necessary attendants until taken in charge by the sanitary troops of the line of communications.

When a command moves forward, the sanitary personnel is promptly relieved by corresponding units from the line of communications. In retreat the necessary personnel remains with the immobile sick and wounded.

303. Combat.—As far as practicable, commanders keep their senior surgeons informed of contemplated movements in order that the sanitary service may make proper preparations.

Unless duly detached, all sanitary troops accompany their units into battle. During battle, however, the chief surgeons of divisions, subject to the approval of their commanders, make such assignments of the division sanitary troops as the situation requires. One surgeon from each regiment is generally attached to an ambulance company or field hospital.

By direction of the regimental commander, the *band* may be assigned to duty in the sanitary service.

At the beginning of an engagement the wounded are cared for by the regimental sanitary troops. Those able to walk are directed to the rear; the others are taken to sheltered places as soon as possible, out of the way of advancing troops.

Diagnosis tags are attached to all wounded and dead as soon as practicable.

As soon as warranted by the situation, the following stations from front to rear are established for the care of the sick and wounded:

1. First-aid stations—generally one for each regiment.
2. Dressing stations—generally one for each brigade.
3. Field hospitals—set up as required.
4. Stations for the slightly wounded—generally one for each division.

The first-aid stations are established under shelter by the regimental surgeons as near the firing line as possible. If the enemy's fire is such that the wounded can not reach the station, advantage is taken of trenches, ravines, and other inequalities of the ground

affording temporary shelter, and the wounded are brought in during lulls in the firing or after nightfall.

In the absence of medical assistance the wounded apply their first-aid packets, if practicable. With this exception the care of the wounded devolves upon the sanitary troops, and no combatant, unless duly authorized, is permitted to take or accompany the sick or injured to the rear.

The *dressing stations* are established by the ambulance companies under instructions from the chief surgeon after the latter has consulted with the division commander. If possible, they are placed out of range of rifle fire, with good protection from artillery fire, and where they can be reached by the ambulances, but as near the first-aid stations as practicable.

The duties of the ambulance companies are:

1. To establish and operate the dressing stations.
2. To help the regimental personnel at the front.
3. To carry the wounded on litters to the dressing stations or the farthest point reached by the ambulances, and thence in ambulances to the field hospitals.

Ambulances are for the transportation of the sick and injured, the necessary nurses or attendants on duty therewith, the instruction of the Hospital Corps, and, in urgent cases, for the transportation of medical supplies; and all persons are prohibited from using them, or requiring or permitting them to be used for any other purpose whatever. It is the duty of officers of the ambulance service to report any violation of this paragraph.

When the ambulances are insufficient the commander may place other transportation at the disposal of the medical department.

The *field hospitals* are assigned stations by the division commander, or by the chief surgeon in the absence of instructions. They are centrally located and beyond the zone of conflict, usually 3 or 4 miles in rear of the dressing stations. Field hospitals are evacuated as rapidly as possible, patients that can not be returned to duty being transferred to the evacuation hospitals.

A *station for the slightly injured* is designated by the commander when practicable, otherwise by the chief surgeon. It is established to relieve dressing stations and field hospitals of the slightly wounded who can walk and require but little attention. It is conspicuously marked so that it can be readily found.

304. Search for Wounded.—After an engagement, commanders organize a thorough search of the battlefield in their vicinity for the wounded, and assist in their protection and removal.

305. The *dead* are collected by details from the line as soon as practicable after the battle and disposed of as the commander directs. No body is buried or otherwise disposed of without being identified and a proper record made.

Service of the line of communications.

306. The service is under the immediate control of the chief surgeon of the line of communications. It includes the evacuation of the field hospitals, establishment and operation of base and other hospitals, casual and convalescent camps, transportation of patients, return to the front of the men fit for duty, transfer to general hospitals or home stations of men gravely or permanently incapacitated, and the procuring and forwarding of medical supplies.

The transportation of sanitary supplies and of the sick and wounded, conforms to the schedules established by the commander of the line of communications.

The sanitary formations consist of transport columns, evacuation hospitals, rest stations, base or general hospitals, contagious disease hospitals, casual camps for sanitary troops, convalescent camps, and the necessary supply depots, trains, ships, etc.

International Red Cross convention.

(Revision of the Geneva Convention.)[a]

307. The convention between the United States and several other powers for the amelioration of the condition of the sick and wounded of armies in the field, signed at Geneva, July 6, 1906, and proclaimed by the President of the United States, August 3, 1907, is as follows:

CHAPTER I.—*The sick and wounded.*

ARTICLE 1. Officers, soldiers, and other persons officially attached to armies, who are sick or wounded, shall be respected and cared for, without distinction of nationality, by the belligerent in whose power they are.

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[a] Circular No. 65, War Department, 1907.

A belligerent, however, when compelled to leave his wounded in the hands of his adversary, shall leave with them, so far as military conditions permit, a portion of the personnel and *matériel* of his sanitary service to assist in caring for them.

ART. 2. Subject to the care that must be taken of them under the preceding article, the sick and wounded of an army who fall into the power of the other belligerent become prisoners of war, and the general rules of international law in respect to prisoners become applicable to them.

The belligerents remain free, however, to mutually agree upon such clauses, by way of exception or favor, in relation to the wounded or sick as they may deem proper. They shall especially have authority to agree:

1. To mutually return the sick and wounded left on the field of battle after an engagement.

2. To send back to their own country the sick and wounded who have recovered, or who are in a condition to be transported and whom they do not desire to retain as prisoners.

3. To send the sick and wounded of the enemy to a neutral state, with the consent of the latter and on condition that it shall charge itself with their internment until the close of hostilities.

ART. 3. After every engagement the belligerent who remains in possession of the field of battle shall take measures to search for the wounded and to protect the wounded and dead from robbery and ill treatment.

He will see that a careful examination is made of the bodies of the dead prior to their interment or incineration.

ART. 4. As soon as possible each belligerent shall forward to the authorities of their country or army the marks or military papers of identification found upon the bodies of the dead, together with a list of the sick and wounded taken in charge by him.

Belligerents will keep each other mutually advised of internments and transfers, together with admissions to hospitals and deaths which occur among the sick and wounded in their hands. They will collect all objects of personal use, valuables, letters, etc., which are found upon the field of battle, or have been left by the sick or wounded who have died in sanitary formations or other establishments, for transmission to persons in interest through the authorities of their own country.

ART. 5. Military authority may make an appeal to the charitable zeal of the inhabitants to receive and, under its supervision, to care for the sick and wounded of the armies, granting to persons responding to such appeals special protection and certain immunities.

CHAPTER II.—*Sanitary formations and establishments.*

ART. 6. Mobile sanitary formations (i. e., those which are intended to accompany armies in the field) and the fixed establishments belonging to the sanitary service shall be protected and respected by belligerents.

ART. 7. The protection due to sanitary formations and establishments ceases if they are used to commit acts injurious to the enemy.

ART. 8. A sanitary formation or establishment shall not be deprived of the protection accorded by article 6 by the fact:

1. That the personnel of a formation or establishment is armed and uses its arms in self-defense or in defense of its sick and wounded.

2. That in the absence of armed hospital attendants, the formation is guarded by an armed detachment or by sentinels acting under competent orders.

3. That arms or cartridges, taken from the wounded and not yet turned over to the proper authorities, are found in the formation or establishment.

CHAPTER III.—*Personnel.*

ART. 9. The personnel charged exclusively with the removal, transportation, and treatment of the sick and wounded, as well as with the administration of sanitary formations and establishments, and the chaplains attached to armies, shall be respected and protected under all circumstances. If they fall into the hands of the enemy they shall not be considered as prisoners of war.

These provisions apply to the guards of sanitary formations and establishments in the case provided for in section 2 of article 8.

ART. 10. The personnel of voluntary aid societies, duly recognized and authorized by their own governments, who are employed in the sanitary formations and establishments of armies, are assimilated to the personnel contemplated in the preceding article, upon condition that the said personnel shall be subject to military laws and regulations.

Each state shall make known to the other, either in time of peace or at the opening or during the progress of hostilities, and in any case before actual employment, the names of the societies which it has authorized to render assistance, under its responsibility, in the official sanitary service of its armies.

ART. 11. A recognized society of a neutral state can only lend the services of its sanitary personnel and formations to a belligerent with the prior consent of its own government and the authority of such belligerent. The belligerent who has accepted such assistance is required to notify the enemy before making any use thereof.

ART. 12. Persons described in articles 9, 10, and 11 will continue in the exercise of their functions, under the direction of the enemy, after they have fallen into his power.

When their assistance is no longer indispensable they will be sent back to their army or country, within such period and by such route as may accord with military necessity. They will carry with them such effects, instruments, arms, and horses as are their private property.

ART. 13. While they remain in his power, the enemy will secure to the personnel mentioned in article 9 the same pay and allowances to which persons of the same grade in his own army are entitled.

CHAPTER IV.—*Matériel.*

ART. 14. If mobile sanitary formations fall into the power of the enemy, they shall retain their *matériel*, including the teams, whatever may be the means of transportation and the conducting personnel. Competent military authority, however, shall have the right to employ it in caring for the sick and wounded. The restitution of the *matériel* shall take place in accordance with the conditions prescribed for the sanitary personnel, and, as far as possible, at the same time.

ART. 15. Buildings and *matériel* pertaining to fixed establishments shall remain subject to the laws of war, but cannot be diverted from their use so long as they are necessary for the sick and wounded. Commanders of troops engaged in operations, however, may use them, in case of important military necessity, if, before such use, the sick and wounded who are in them have been provided for.

ART. 16. The *matériel* of aid societies admitted to the benefits of this convention in conformity to the conditions therein established, is regarded as private property and, as such, will be respected under all circumstances, save that it is subject to the recognized right of requisition by belligerents in conformity to the laws and usages of war.

CHAPTER V.—*Convoys of evacuation.*

ART. 17. Convoys of evacuation shall be treated as mobile sanitary formations subject to the following special provisions:

1. A belligerent intercepting a convoy may, if required by military necessity, break up such convoy, charging himself with the care of the sick and wounded whom it contains.

2. In this case the obligation to return the sanitary personnel, as provided for in article 12, shall be extended to include the entire military personnel, under competent orders, in the transportation and protection of the convoy.

The obligation to return the sanitary *matériel*, as provided for in article 14, shall apply to railway trains and vessels intended for interior navigation which have been especially equipped for evacuation purposes, as well as to the ordinary vehicles, trains, and vessels which belong to the sanitary service.

Military vehicles, with their teams, other than those belonging to the sanitary service, may be captured.

The civil personnel and the various means of transportation obtained by requisition, including railway *matériel* and vessels utilized for convoys, are subject to the general rules of international law.

CHAPTER VI.—*Distinctive emblem.*

ART. 18. Out of respect to Switzerland the heraldic emblem of the red cross on a white ground, formed by the reversal of the federal colors, is continued as the emblem and distinctive sign of the sanitary service of armies.

ART. 19. This emblem appears on flags and brassards as well as upon all *matériel* appertaining to the sanitary service, with the permission of the competent military authority.

ART. 20. The personnel protected in virtue of the first paragraph of article 9, and articles 10 and 11, will wear attached to the left arm a brassard bearing a red cross on a white ground, which will be issued and stamped by competent military authority, and accompanied by a certificate of identity in the case of persons attached to the sanitary service of armies who do not have military uniform.

ART. 21. The distinctive flag of the convention can only be displayed over the sanitary formations and establishments which the convention provides shall be respected, and with the consent of the military authorities. It shall be accompanied by the national flag of the belligerent to whose service the formation or establishment is attached.

Sanitary formations which have fallen into the power of the enemy, however, shall fly no other flag than that of the Red Cross so long as they continue in that situation.

ART. 22. The sanitary formations of neutral countries which, under the conditions set forth in article 11, have been authorized to render their services, shall fly, with the flag of the convention, the national flag of the belligerent to which they are attached. The provisions of the second paragraph of the preceding article are applicable to them.

ART. 23. The emblem of a red cross on a white ground and the words *Red Cross* or *Geneva Cross* may only be used, whether in time of peace or war, to protect or designate sanitary formations and establishments, the personnel and *matériel* protected by the convention.

CHAPTER VII.—*Application and execution of the convention.*

ART. 24. The provisions of the present convention are obligatory only on the contracting powers, in case of war between two or more of them. The said provisions shall cease to be obligatory if one of the belligerent powers should not be signatory to the convention.

ART. 25. It shall be the duties of the commanders-in-chief of the belligerent armies to provide for the details of execution of the foregoing articles, as well as for unforeseen cases, in accordance with the instructions of their respective governments, and conformably to the general principles of this convention.

ART. 26. The signatory governments shall take the necessary steps to acquaint their troops, and particularly the protected personnel, with the provisions of this convention and to make them known to the people at large.

CHAPTER VIII.—*Repression of abuses and infractions.*

ART. 27. The signatory powers whose legislation may not now be adequate engage to take or recommend to their legislatures such measures as may be necessary to prevent the use, by private persons or by societies other than those upon which this convention confers the right thereto, of the emblem or name of the Red Cross or Geneva Cross, particularly for commercial purposes by means of trade marks or commercial labels.

The prohibition of the use of the emblem or name in question shall take effect from the time set in each act of legislation, and at the latest five years after this convention goes into effect. After such going into effect, it shall be unlawful to use a trade-mark or commercial label contrary to such prohibition.

ART. 28. In the event of their military penal laws being insufficient, the signatory governments also engage to take, or to recommend to their legislatures, the necessary measures to repress, in time of war, individual acts of robbery and ill treatment of the sick and wounded of the armies, as well as to punish, as usurpations of military insignia, the wrongful use of the flag and brassard of the Red Cross by military persons or private individuals not protected by the present convention.

They will communicate to each other through the Swiss Federal Council the measures taken with a view to such repression, not later than five years from the ratification of the present convention.

General provisions.

ART. 29. The present convention shall be ratified as soon as possible. The ratifications will be deposited at Berne.

A record of the deposit of each act of ratification shall be prepared, of which a duly certified copy shall be sent, through diplomatic channels, to each of the contracting powers.

ART. 30. The present convention shall become operative, as to each power, six months after the date of deposit of its ratification.

ART. 31. The present convention, when duly ratified, shall supersede the convention of August 22, 1864, in the relations between the contracting states.

The convention of 1864 remains in force in the relations between the parties who signed it but who may not also ratify the present convention.

ART. 32. The present convention may, until December 31, proximo, be signed by the powers represented at the conference which opened at Geneva on June 11, 1906, as well as by the powers not represented at the conference who have signed the convention of 1864.

Such of these powers as shall not have signed the present convention on or before December 31, 1906, will remain at liberty to accede to it after that date. They shall signify their adherence in a written notification addressed to the Swiss Federal Council, and communicated to all the contracting powers by the said council.

Other powers may request to adhere in the same manner, but their request shall only be effective if, within the period of one year from its notification to the Federal Council, such council has not been advised of any opposition on the part of the contracting powers.

ART. 33. Each of the contracting parties shall have the right to denounce the present convention. This denunciation shall only become operative one year after a notification in writing shall have been made to the Swiss Federal Council, which shall forthwith communicate such notification to all the other contracting powers.

This denunciation shall only become operative in respect to the power which has given it.

In faith whereof the plenipotentiaries have signed the present convention and affixed their seals thereto.

Done at Geneva, the sixth day of July, one thousand nine hundred and six, in a single copy, which shall remain in the archives of the Swiss Confederation and certified copies of which shall be delivered to the contracting parties through diplomatic channels.

(Here follow the signatures.)[a]

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FINAL PROTOCOL OF THE CONFERENCE FOR THE REVISION OF THE GENEVA CONVENTION.

In addition, and conformably to article 16 of the convention for the peaceful settlement of international disputes, of July 29, 1899, which recognized arbitration as the most effective and at the same time, most equitable means of adjusting differences that have not been resolved through the diplomatic channel, the conference uttered the following wish:

The conference expressed the wish that, in order to arrive at as exact as possible an interpretation and application of the Geneva convention, the contracting powers will refer to the Permanent Court at The Hague, if permitted by the cases and circumstances, such differences as may arise among them, in time of peace, concerning the interpretation of the said convention.[b]

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[a] United States of America, Germany, Argentine Republic, Chili, China, Congo Free State, Denmark, Spain, Brazil, Mexico, France, Great Britain, Greece, Guatemala, Honduras, Italy, Japan, Luxemburg, Montenegro, Norway, the Netherlands, Peru, Persia, Portugal, Roumania, Russia, Servia, Siam, Sweden, Switzerland, and Uraguay.

[b] Adopted by all the signatory powers except Corea, Great Britain, and Japan.

ARTICLE XI.

THE LAWS OF WAR.

INSTRUCTIONS FOR THE GOVERNMENT OF ARMIES OF THE UNITED STATES IN TIME OF WAR.

OPENING OF HOSTILITIES. [a]

308. The contracting powers recognize that hostilities between themselves must not commence without a previous and explicit warning, either in the form of a declaration of war, giving reasons, or of an ultimatum with conditional declaration of war.

309. The existence of a state of war must be promptly notified to neutral powers, and shall not be held to affect them until after the receipt of the notification, which may, however, be given by telegraph. Nevertheless, neutral powers can not rely on the absence of notification if it be clearly established that they were in fact aware of the existence of a state of war.

LAWS AND CUSTOMS OF WAR ON LAND.

I. *Belligerents.*

QUALIFICATIONS OF BELLIGERENTS.

310. The laws, rights, and duties of war apply not only to the army, but also to militia and volunteer forces, fulfilling the following conditions:

(*a*) To be commanded by a person responsible for his subordinates.

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[a] From the following conventions adopted by the Second International Peace Conference, held at The Hague from June 15 to October 18, 1907, and ratified by the Senate, March 10, 1908: Opening of hostilities; laws and customs of war on land; rights and duties of neutral powers; submarine contact mines.

(*b*) To have a fixed distinctive emblem recognizable at a distance.
(*c*) To carry arms openly.
(*d*) To conduct their operations in accordance with the laws and customs of war.

In countries where militia or volunteer forces constitute the army, or form part of it, they are included under the denomination "army."

311. The inhabitants of unoccupied territory who, on the approach of the enemy, spontaneously take up arms to resist invading troops without having had time to organize themselves in accordance with the preceding section, are to be regarded as belligerents, provided they carry arms openly and respect the laws and customs of war.

312. The armed forces of belligerents may consist of combatants and noncombatants. In case of capture by the enemy, both have a right to be treated as prisoners of war.

PRISONERS OF WAR.

313. Prisoners of war are prisoners of the hostile government, and not of the individuals or forces that capture them.

They must be humanely treated.

All their personal belongings, except arms, horses, and military papers, remain their property.

314. Prisoners of war may be interned in a town, fortress, camp, or other place, and obligated not to go beyond certain fixed limits; but they can not be confined except as an indispensable measure of safety, and only while the circumstances necessitating that measure continue to exist.

315. The state may utilize the labor of prisioners of war, other than officers, according to their rank and aptitude. The work must not be excessive nor have any connection with the operations of the war.

Prisoners may be authorized to work for the public service, for private persons, or on their own account. The work done for the state is paid for at the rates in force for work of a similar kind done by soldiers of the national army, or, if there be none in force, at rates proportional to the work accomplished.

When the work is for branches of the public service other than the military, or for private persons, the conditions are fixed by agreement with the military authorities.

The wages of prisoners are used to improve their condition, and the balance, after deducting the cost of their maintenance, is paid them on their release.

316. The government into whose hands prisoners of war have fallen is charged with their maintenance.

In the absence of special agreement between the belligerents, prisoners of war are treated as regards rations, quarters, and clothing on the same footing as troops of the government that captured them.

317. Prisoners of war are subject to the laws, regulations, and orders in force in the army of the state in whose power they are.

Any act of insubordination justifies the adoption toward them of the necessary measures of severity.

Escaped prisoners retaken before joining their own army, or before leaving the territory occupied by the army that captured them, are liable to disciplinary punishment.

Escaped prisoners who have rejoined their own army or have left the occupied territory and are again captured, are not liable to any punishment on account of their former escape.

318. Every prisoner of war is bound to give, if questioned on the subject, his true name and rank; should he refuse to obey this rule, he is liable to have the advantages given to prisoners of his class curtailed.

319. Prisoners of war may be set at liberty on parole if the laws of their country permit; in such cases they are bound on their personal honor scrupulously to fulfil, both toward their own government and the government which captured them, the engagements they may have made.

In such cases their own government is bound neither to require of nor accept from them any service incompatible with the parole given.

320. A prisoner of war can not be compelled to accept his liberty on parole; similarly the hostile government is not obliged to accede to the request of a prisoner to be set at liberty on parole.

321. Prisoners of war liberated on parole and recaptured bearing arms against the government to which they had pledged their honor, or against the allies of that government, forfeit their right to be treated as prisoners of war, and may be brought to trial before the proper tribunals.

322. Individuals accompanying an army without directly belonging to it, such as newspaper correspondents, reporters, sutlers, and

contractors, who fall into the hands of the enemy and whom the latter deems it expedient to detain, are entitled to be treated as prisoners of war, provided they are in possession of certificates from the military authorities of the army which they were accompanying.

323. A bureau of information for prisoners of war is organized at the commencement of hostilities in each of the belligerent states, and when necessary in neutral countries where belligerents have been received. The function of this bureau is to reply to all inquiries about the prisoners, and to receive from the various services concerned all information respecting internments, transfers, paroles, exchanges, escapes, admissions to hospitals, deaths, and other information that may be necessary to enable it to prepare and keep up to date an individual record of each prisoner of war. This record must show the prisoner's entrance number, name and surname, age, place of residence or home, rank, company and regiment or corps, wounds, date and place of capture, of internment, wounding, and death, and other pertinent information. The record is sent to the government of the other belligerent after the conclusion of peace.

It is also the duty of the bureau of information to collect all personal effects, valuables, letters, etc., found on the field of battle or left by prisoners released on parole or exchanged, or that have escaped, or died in hospitals or other sanitary establishments, and to forward them to those concerned.

324. Societies for the relief of prisoners of war, if properly constituted in accordance with the laws of their country and with the object of serving as the channel for charitable work, and their duly accredited agents, receive from the belligerents every facility for the efficient performance of their humane task within the bounds imposed by military necessity and administrative regulations. Agents of these societies, on giving an undertaking in writing to comply with all measures of order and police which the military authorities may issue, and when furnished with a personal permit by them, may be admitted to places of internment for the purpose of distributing relief, and also to the halting places for repatriated prisoners.

325. Information bureaus enjoy the privilege of free postage. Letters, money orders, valuables, and parcels by post, intended for prisoners of war, or sent by them, are exempt from all postal charges

in the countries of origin and destination, as well as in the countries through which they pass.

Presents and relief in kind for prisoners of war are admitted free of all import or other duties and of payment for transportation by state railways.

326. Officers taken prisoners receive the same rate of pay as officers of corresponding rank in the country where they are detained, the amount to be ultimately refunded by their own government.

327. Prisoners of war enjoy complete liberty in the exercise of their religion, including attendance at the services of their own church, on the sole condition that they comply with the police regulations issued by the military authorities.

328. The wills of prisoners of war are received or drawn up in the same way as for soldiers of the national army.

The same rules are followed regarding death certificates and the burial of prisoners of war, due regard being paid to grade and rank.

329. After the conclusion of peace, the repatriation of prisoners of war is carried out as quickly as possible.

THE SICK AND WOUNDED.

330. The obligations of belligerents respecting the sick and wounded are governed by the Geneva convention.

II. *Hostilities.*

MEANS OF INJURING THE ENEMY, SIEGES, AND BOMBARDMENTS.

331. Belligerents are not unrestricted as to choice of means of injuring the enemy.

332. In addition to the prohibitions provided by special conventions, it is expressly forbidden—

(*a*) To employ poison or poisoned weapons.

(*b*) To kill or wound by treachery individuals belonging to the hostile nation or army.

(*c*) To kill or wound an enemy who, having laid down his arms, or no longer having means of defense, has surrendered unconditionally.

(*d*) To declare that no quarter will be given.

(*e*) To employ arms, projectiles, or material calculated to cause unnecessary suffering.

(*f*) To make improper use of a flag of truce, of the national flag, or of the military insignia and uniform of the enemy, or of the distinctive badges of the Geneva convention.

(*g*) To destroy or seize enemy property, unless such destruction or seizure be imperatively demanded by the necessities of war.

(*h*) To declare abolished, suspended, or inadmissible the right of subjects of the hostile party to institute legal proceedings.

A belligerent is likewise forbidden to compel the subjects of the hostile government to take part in the operations of war directed against their own country, even if they were in the service of the belligerent before the commencement of the war.

333. Ruses of war and the employment of measures necessary for obtaining information about the enemy and the country are considered permissible.

334. The attack or bombardment, by any means whatever, of undefended towns, villages, dwellings, or buildings, is forbidden.

335. Except in cases of assault, the officer in command of an attacking force must do all in his power to warn the authorities before commencing a bombardment.

336. In sieges and bombardments all necessary steps must be taken to spare, as far as possible, buildings dedicated to public worship, art, science, or charitable purposes, historic monuments, hospitals, and places where the sick and wounded are collected, provided such buildings, etc., are not being used at the time for hostile purposes.

It is the duty of the besieged to indicate such buildings or places by distinctive and visible signs, and to notify the enemy beforehand.

337. The giving over to pillage of a town or place, even when taken by assault, is forbidden.

SPIES.

338. A person can only be considered a spy when, acting clandestinely or on false pretences, he obtains or endeavors to obtain information in the zone of operations of a belligerent, with the intention of communicating it to the enemy.

Accordingly, soldiers not wearing a disguise who have penetrated into the zone of operations of the hostile army, for the purpose of obtaining information, are not considered spies. Similarly, the following are not considered spies: Soldiers and civilians intrusted

with the delivery of despatches intended either for their own or the hostile army, and carrying out their mission openly. To this class likewise belong persons sent in balloons for the purpose of carrying despatches and, generally, of maintaining communications between the different parts of an army or territory.

339. A spy taken in the act shall not be punished without previous trial.

340. A spy who, after rejoining his own army, is subsequently captured by the enemy, is treated as a prisoner of war, and incurs no liability for his former acts of espionage.

FLAGS OF TRUCE.

341. A person is regarded as bearing a flag of truce when he has been authorized by one of the belligerents to enter into communication with the other, and presents himself under a white flag. He is entitled to inviolability, as are also the trumpeter, bugler, or drummer, the flag bearer, and interpreter who may accompany him.

342. The commander to whom a flag of truce is sent is not obliged in all cases to receive it.

He may take all steps necessary to prevent the envoy taking advantage of his mission to obtain information.

In case of abuse, he has the right temporarily to detain the envoy.

343. The envoy loses his rights of inviolability if it is proved in a positive and incontestable manner that he has taken advantage of his privileged position to provoke or commit an act of treachery.

CAPITULATIONS.

344. Capitulations agreed upon between the contracting parties must take into account the rules of military honor.

Once settled, they must be scrupulously observed by both parties.

ARMISTICES.

345. An armistice suspends military operations by mutual agreement between the belligerent parties. If its duration is not defined, the belligerent parties may resume operations at any time, provided always that the enemy is warned within the time agreed upon, in accordance with the terms of the armistice.

346. An armistice may be general or local. The first suspends the entire military operations of the belligerent States; the second between certain portions of the belligerent armies only and within a fixed zone.

347. An armistice must be notified officially and in good time to the authorities concerned and to the troops. Hostilities are suspended immediately after the notification, or at the time fixed.

348. It rests with the contracting parties to settle, in the terms of the armistice, the relations which may be allowed in the theater of war with, and between, the inhabitants of the belligerent States.

349. Any serious violation of the armistice by one of the parties gives the other party the right of denouncing it, and even, in cases of urgency, of recommencing hostilities immediately.

350. A violation of the terms of the armistice by individuals acting on their own initiative only entitles the injured party to demand the punishment of the offenders, and, if there is occasion for it, compensation for the losses sustained.

III. *Occupied territory.*

351. Territory is considered occupied when actually placed under the authority of the hostile army.

The occupation extends only to the territory where such authority has been established and can be exercised.

352. The sovereign authority of the State having passed *de facto* into the hands of the occupant, the latter is bound to do all in his power to restore, and insure, as far as possible, public order and safety, respecting at the same time, unless absolutely prevented, the laws in force in the country.

353. A belligerent is forbidden to compel the inhabitants of territory occupied by it to furnish information about the army of the other belligerent, or about its means of defense.

354. It is forbidden to force the inhabitants of occupied territory to swear allegiance to the hostile power.

355. Family honor and rights, individual life, and private property, as well as religious convictions and worship, must be respected.

Private property may not be confiscated.

356. Pillage is expressly forbidden.

357. If, in the territory occupied, the occupant collects the taxes, dues, and tolls payable to the State, he shall do so, as far as possible, in accordance with the laws of assessment in force at the

time, and is in consequence bound to defray the expenses of the administration of the occupied territory to the same extent as the National Government had been so bound.

358. If, in addition to the taxes mentioned in the above section, the occupant levies other money contributions in the occupied territory, they shall only be applied to the needs of the army or of the administration of the territory in question.

359. No collective penalty, pecuniary or otherwise, shall be inflicted upon the population on account of the acts of individuals for which it can not be regarded as collectively responsible.

360. No contribution shall be collected except under a written order, and on the responsibility of a general in supreme command.

The collection of the said contribution shall be effected, as far as possible, only in accordance with the laws of assessment of taxes in force at the time.

For every contribution a receipt must be given to the contributors.

361. Requisitions in kind and services shall not be demanded from local authorities or inhabitants except for the needs of the army of occupation. They shall be in proportion to the resources of the country, and of such a nature as not to involve the inhabitants in the obligation of taking part in military operations against their own country.

Such requisitions and services shall only be demanded on the authority of the commander in the locality occupied.

As far as possible, requisitions shall be paid for in ready money; if not, a receipt shall be given and the payment of the amount due shall be made as soon as possible.

362. An army of occupation can only take possession of cash, funds, and realizable securities which are strictly the property of the state, depots of arms, means of transport, stores and supplies, and, generally, all movable state property that may be used for military operations.

Except in cases governed by naval law, all appliances adapted for the transmission of news, or for the transport of persons or goods, whether on land, at sea, or in the air, depots of arms, and, in general, all kinds of war material may be seized, even if belonging to private individuals, but they must be restored on the conclusion of peace, and indemnities paid for them.

363. Submarine cables connecting an occupied territory with a neutral territory shall not be seized or destroyed except in case of

absolute necessity. They also must be restored at the conclusion of peace, and indemnities paid for them.

364. The occupying state is regarded only as administrator and usufructuary of public buildings, landed property, forests, and agricultural undertakings belonging to the hostile state, and situated in the occupied country. It must safeguard the capital of such properties, and administer them in accordance with the rules of usufruct.

365. The property of municipalities, as well as that of institutions dedicated to public worship, charity, education, and to science and art, even when state property, is treated as private property.

Any seizure or destruction of, or wilful damage to, institutions of this character, historic monuments, and works of science and art, is forbidden, and should be made the subject of legal proceedings.

RIGHTS AND DUTIES OF NEUTRAL POWERS.

366. The territory of neutral powers is inviolable.

367. Belligerents are forbidden to move troops or convoys, whether of munitions of war or of supplies, across the territory of a neutral power.

368. Belligerents are likewise forbidden:

(*a*) To erect on the territory of a neutral power a wireless telegraph station or any apparatus for the purpose of communicating with belligerent forces on land or sea;

(*b*) To use any installation of this kind established by them for purely military purposes in the territory of a neutral power before the war, and not previously opened for the transmission of public messages.

369. Combatant forces to assist belligerents must not be formed nor recruiting agencies opened in the territory of a neutral power.

370. A neutral power must not allow any of the acts referred to in sections 367 to 369 to occur on its territory.

It is not called upon to punish acts in violation of neutrality unless such acts have been committed on its own territory.

371. The responsibility of a neutral power is not involved by the mere fact that persons cross the frontier individually in order to offer their services to one of the belligerents.

372. A neutral power is not bound to prevent the export or transit, for either belligerent, of arms, munitions of war, or, in general, of anything that could be of use to an army or fleet.

373. A neutral power is not bound to forbid or restrict the use on behalf of belligerents of telegraph or telephone cables, or of wireless telegraph apparatus, belonging to it or to companies or to private individuals.

374. A neutral power must apply impartially to the belligerents every restriction or prohibition which it may enact in regard to the matters referred to in sections 372 and 373.

The neutral power shall see that the above obligation is observed by companies or private owners of telegraph or telephone lines or wireless telegraph apparatus.

375. The fact of a neutral power resisting, even by force, attempts to violate its neutrality can not be regarded as a hostile act.

INTERNMENT OF BELLIGERENTS AND CARE OF WOUNDED IN NEUTRAL TERRITORY.

376. A neutral power that receives on its territory troops belonging to belligerent armies shall intern them, as far as possible, at a distance from the theater of war.

It may keep them in camps and may even confine them in fortresses or in places set apart for the purpose.

It shall decide whether officers may be left free on giving their parole not to leave the neutral territory without permission.

377. In default of special agreement, the neutral power shall supply the interned with the food, clothing, and relief which the dictates of humanity prescribe.

At the conclusion of peace the expenses caused by the internment shall be made good.

378. A neutral power that receives escaped prisoners of war shall leave them at liberty. If it allows them to remain in its territory it may assign them a place of residence.

The same rule applies to prisoners of war brought by troops taking refuge in the territory of a neutral power.

379. A neutral power may authorize the passage into its territory of the sick and wounded belonging to belligerent armies, on condition that the trains or other methods of transport by which they are conveyed shall carry neither combatants nor war material. In such a case, the neutral power is bound to take the necessary measures of safety and control.

The sick and wounded of one belligerent brought under these conditions into neutral territory by the other belligerent must be

so kept by the neutral power as to insure their taking no further part in the military operations. The same duty devolves on the neutral state with regard to the sick and wounded of the other army that may be committed to its care.

380. The Geneva convention applies to the sick and wounded who are interned in neutral territory.

NEUTRAL PERSONS.

381. The subjects or citizens of a state which is not taking part in the war are deemed neutrals.

382. A neutral can not claim the benefit of his neutrality:

(*a*) If he commits hostile acts against a belligerent;

(*b*) If he commits acts in favor of a belligerent, particularly if he voluntarily enlists in the ranks of the armed forces of one of the parties.

In such a case the neutral shall not be more severely treated by the belligerent against whom he has abandoned his neutrality than a subject or citizen of the other belligerent state could be for the same act.

383. The following shall not be considered as acts committed in favor of one belligerent within the meaning of section 382, letter (*b*):

(*a*) The furnishing of supplies or the making of loans to one of the belligerents, provided the person so doing neither lives in the territory of the other party, nor in the territory occupied by it, and that the supplies do not come from such territory;

(*b*) Services rendered in matters of police or civil administration.

RAILWAY MATERIAL.

384. Railway material coming from the territory of neutral powers, whether it be the property of the said powers or of companies or private persons, and recognizable as such, shall not be requisitioned or utilized by a belligerent except when absolutely necessary. It shall be sent back as soon as possible to the country of origin.

A neutral power may likewise, in case of necessity, retain and utilize to a corresponding extent railway material coming from the territory of the belligerent power.

Compensation shall be paid on either side in proportion to the material used, and to the period of usage.

IV. *Submarine contact mines.*

385. It is forbidden—

1. To lay unanchored automatic contact mines, unless they be so constructed as to become harmless one hour at most after the person that laid them has ceased to control them.

2. To lay anchored automatic contact mines which do not become harmless as soon as they have broken loose from their moorings.

3. To use torpedoes which do not become harmless when they have missed their mark.

386. It is forbidden to lay automatic contact mines off the coast and ports of the enemy with the sole object of intercepting commercial shipping.

387. When anchored automatic contact mines are employed, every possible precaution must be taken for the security of peaceful shipping.

The belligerents undertake to do their utmost to render these mines harmless after a limited time has elapsed, and, should the mines cease to be under observation, to notify the danger zones as soon as military exigencies permit, by a notice to mariners, which must also be communicated to the governments through the diplomatic channel.

388. Neutral powers that lay automatic contact mines off their coasts must observe the same rules and take the same precautions as are imposed on belligerents.

The neutral power must give notice to mariners in advance of the places where automatic contact mines have been laid. This notice must be communicated at once to the governments through the diplomatic channel.

389. At the close of the war the contracting powers undertake to do their utmost to remove the mines that they have laid, each power removing its own mines.

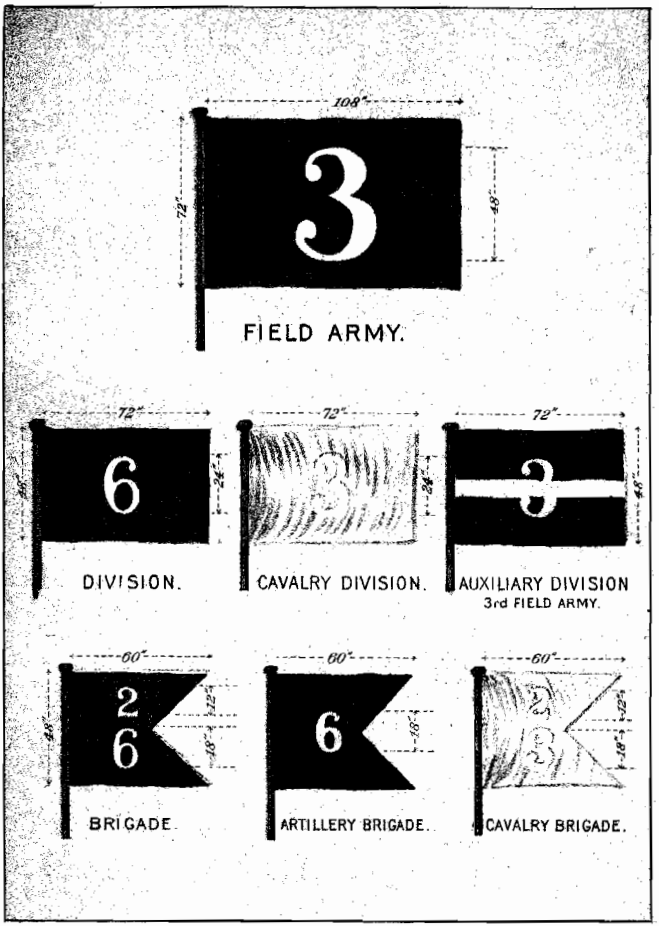
As regards anchored automatic contact mines laid by one of the belligerents off the coast of the other, their position must be notified to the other party by the power which laid them, and each power must proceed with the least possible delay to remove the mines in its own waters.

390. The contracting powers that do not at present own perfected mines of the description contemplated in the present convention, and, consequently, could not at present carry out the rules laid

down in sections 385 and 387, undertake to convert the matériel of their mines as soon as possible, so as to bring it into conformity with the foregoing requirements.

NOTE.—The conventions from which the foregoing rules are taken provide that the provisions of such conventions do not apply except between the contracting powers, and then only if all the belligerents are parties to the conventions.

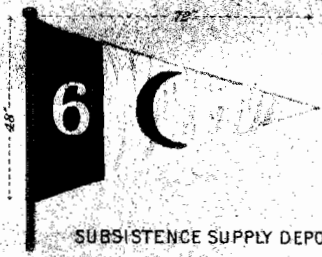
The effect of the foregoing rules is to revoke those parts of General Orders, No. 100, A. G. O., 1863, that are contrary to or covered by these rules. The remainder of General Orders, No. 100, therefore remains in force with the same effect and to the same extent as if these rules had not been adopted.


108"
72"
48"
3
FIELD ARMY.
72"
6
24"
DIVISION.
72"
3
CAVALRY DIVISION.
72"
3
AUXILIARY DIVISION
3rd FIELD ARMY.
60"
2
6
12"
18"
BRIGADE.
60"
6
18"
ARTILLERY BRIGADE.
60"
2
3
12"
18"
CAVALRY BRIGADE.

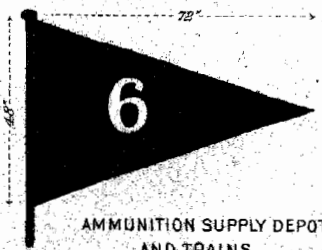
SUPPLY.



QUARTERMASTER
SUPPLY DEPOTS AND TRAIN.



SUBSISTENCE SUPPLY DEPOTS.



AMMUNITION SUPPLY DEPOTS
AND TRAINS.

U. S. ARMY FIELD MESSAGE.	No. (These space for Signal Operators only).	Sent by.	Time.	Rec'd by.	Time.	Check.
Communicated by **Buzzer, Phone, Telegraph, Wireless, Lantern, Helio, Flag, Cyclist, Foot Messenger, Mounted Messenger, Motor Car, Flying Machine.** Underscore means used.	[Name of sending detachment.] *From*..... [Location of sending detachment.] *At*..... *Date*.....*Hour*.....*No*.....					

To.....

.....

.....

.....

.....

.....

Received.....

The heading "From" is filled in with the *name* of the detachment sending the information; as "Officer's Patrol, 7th Cav." Messages sent on the same day from the same source to the same person are numbered consecutively. The address is written briefly; thus, "Commanding Officer, Outpost, 1st Brigade." In the signature the writer's surname only and rank are given.

This blank is four and a half by six and three-quarters inches, including the margin on the left for binding. The back is ruled in squares, the side of each square representing 100 yards on a scale of 3 inches to one mile, for use in making simple sketches explanatory of the message. It is issued by the Signal Corps in blocks of forty with duplicating sheets. The regulation envelope is three by five and one-fourth inches and is printed as follows:

U. S. ARMY FIELD MESSAGE.

To..... *No.*.....

(For Signal operators only.)

When sent.....*No*.....

Rate of speed.....

Name of messenger.....

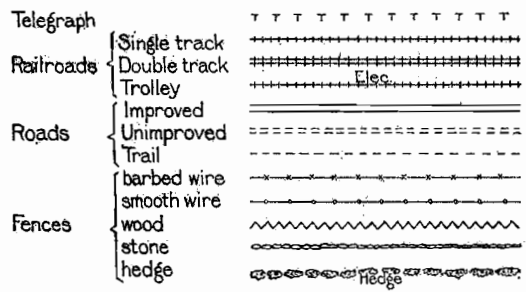
When and by whom rec'd.....

This Envelope will be Returned to Bearer.

APPENDIX C

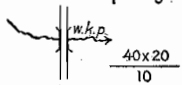
The following abbreviations are authorized for use on field maps and sketches. When these words are used they must be written in full or abbreviated as shown. The abbreviations must not be used for words other than those in the table. Words not in the table are not as a rule abbreviated.

abut.	abutment
B.S.	blacksmith shop
bot.	bottom
Cr.	creek
cul.	culvert
cult.	cultivated
d.	deep
E.	east
f.	fordable
gir.	girder
G.M.	grist mill
i.	iron
I.	island
jc.	junction
kp.	king-post
L.	lake
Mt.	mountain
N.	north
n.f.	not fordable
p.	pier
pk.	plank
P.O.	post Office
Pt.	point
Q.	quarry
q.p.	queen post
R.	river
R.H.	round house
R.R.	railroad
S.	south
s.	steel
S.H.	school house
S.M.	saw mill
Sta.	station
st.	stone
str.	stream
tres.	trestle
tr.	truss
W.T.	water tank
W.W.	water works
W.	west
wd.	wide
w.	wood



Bridge 

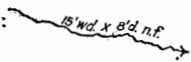
Indicate character and span by abbreviations.

Example: 

Meaning wooden king post bridge, 40 feet long, 20 feet wide, and 10 feet above the water.

Streams 

Indicate character by abbreviations.

Example: 

Meaning a stream 15 feet wide, 8 feet deep, and not fordable.

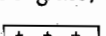
House ▪ Church ± School house ▪S.H.

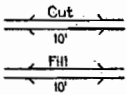
Woods 

Orchards  Cultivated Land Cult.

If boundary lines are fences they are indicated as such.

Brush, crops or grass, important as cover or forage 

Cemetery  Trees, isolated 

Cut and fill — 

cut 10 feet deep
fill 10 feet high

For more elaborate map work the authorized conventional signs are used.

APPENDIX D.

While the following forms are given for the convenience of officers in the field and with a view of securing uniformity in the service, it must be remembered that no two military situations are the same. The sequence in paragraph 3 is not obligatory, the commander arranging the details according to his best judgment.

MODELS.

For an advance.a

Field Orders
No. 3

Det. 1st Div. 1st Field Army,
Leavenworth, Kans.,
9 Aug. 08, 8-15 P. M.

Troops

(a) Independent Cavalry:
Col. A
1st & 2d Sqs. 1st Cav. (less 1 tr.)
(b) Advance Guard:
Col. B
1st Inf.
1 tr. 1st Cav.
Btry. B, 5th F. A.
Det. Co. A, Engrs.
Det. Amb. Co. No. 1
(c) Main body—in order of march:
1st Bn. 2d Inf.
1st Bn. 5th F. A. (less 1 btry.)
1st Brig.b (less 1st Inf. & 1st Bn. 2d Inf.)
4th Inf. (less 1 co.)
Co. A, Engrs. (less det.)
Amb. Co. No. 1 (less det.)
1st F. Hosp.
(d) Signal Troops:
Lieut. D
1 plat. Co. A

1. The enemy's cavalry patrols have been seen north of KICKAPOO. His infantry and artillery are reported at ATCHISON.

Our division is 8 miles south of LEAVENWORTH.

2. This detachment will march to-morrow to KICKAPOO.

3. (a) The independent cavalry will start at 5-30 A. M., covering the movement.

(b) The advance guard will clear the northern exit of LEAVENWORTH at 6 A. M., marching by the ATCHISON CROSS-FRENCHMAN road.

(c) The main body will follow the advance guard at 1,200 yards.

(d) The signal troops will establish a line of information along the line of march between the independent cavalry and LEAVENWORTH, one of the stations being at FRENCHMAN.

4. The field train, escorted by one company, 4th Inf., will follow the main body as far as FRENCHMAN.

5. The detachment commander will be with the main body until 7 A. M., and thereafter with the advance guard.

By order of Brig. Gen. F:

Lt. Col. 1st Inf.,
Act. Chief of Staff.

Copies to Colonels A and B, commanders of arty. and engrs., and to staff; to division commander by wire.

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a See map of Fort Leavenworth, Kans., and vicinity.
b Consisting of the 1st, 2d, and 3d regiments of infantry.

MARCH TABLE.

In movements of large forces on several roads, it is sometimes desirable to prescribe the daily marches of the various columns for two or more days. In such cases the order may often be simplified by appending or incorporating a march table, usually in the following form, each column providing its own security.

March Table.

——— Army, from ——— [date], to ——— [date].

Date.	——— Division.	——— Division.	Army Hq.
	Location of main body or of advance guard at end of each day's march, and line of march, if necessary.	Location of main body or of advance guard at end of each day's march, and line of march, if necessary.	Location at end of each day's march.

For advance guards.

Advance Guard, Det. 1st Div.,
Leavenworth, Kans.,
10 Aug. 08, 5-30 A. M.

Field Orders[a]
No. 1

Troops

(a) Advance Cavalry:
Captain B
Tr. A, 1st Cav. (less 1 squad)

(b) Support:
Major C
1st Bn. 1st Inf.
1st squad, Tr. A, 1st Cav.[b]
Det. Co. A, Engrs.

1. A Red force of all arms is reported to have camped near ATCHISON last night. Its cavalry patrols were seen near KICKAPOO yesterday.
Our main body will follow the advance guard at one-half mile.
2. This advance guard will march on KICKAPOO.
3. (a) The advance cavalry will leave camp at once and march via ATCHISON CROSS to KICKAPOO. SHERIDAN'S DRIVE and the country west of the line of march for at least three miles will be carefully observed.

[a] This order is issued pursuant to the foregoing "march order" and assumes that the troops designated for the advance guard have been notified when and where to assemble.

[b] If this duty can be performed by mounted infantry scouts, cavalry is not detailed.

(c) Reserve—in order of march:
Hq. & 2d Bn. 1st Inf.
3d Bn. 1st Inf.
Btry. B, 5th F. A.
Det. Amb. Co. No. 1

(b) The point of the support will start at 5-45 A. M., and march by the ATCHISON CROSS—FRENCHMAN—KICKAPOO road.
(c) The reserve will follow the support at 800 yards.
4. The field train will assemble near 70 at 7 A. M. under Captain X, Quartermaster, 1st Inf., and join the field train of the main body as that train passes.
5. I shall be at the head of the reserve.

Y,
Colonel,
Commanding.

Verbally to assembled troop, battalion and battery commanders, and staff; copy to det. commander by Lt. N.

GENERAL FORMS.

For an advance.

Field Orders
No. —

[Title]
[Place]
[Date and hour]

Troops

(a) Independent Cavalry:
[Commander]
[Troops]
(b) Advance Guard:
[Commander]
[Troops]
(c) Main Body—in order of march:
[Commander][a]
(d) Right [left] Flank Guard:
[Commander]
[Troops]
(e) Signal Troops:
[Commander]
[Troops]

1. [Information of enemy and of our supporting troops]
2. [Plan of commander]
3. (a) [Instructions for independent cavalry—place and time of departure, roads or country to be covered, special mission]
(b) [Instructions for advance guard—place and time of departure, or distance at which it is to precede the main body, route, special mission]
(c) [Instructions for main body—distance at which it is to follow the advance guard, or place and time of departure]
(d) [Instructions for flank guard—place and time of departure, route, special mission]
(e) [Instructions for signal troops—lines of information to be established, special mission]
(x) [Instructions for outpost—when relieved, subsequent duties]
4. [Instructions for field train—escort, distance in rear of column, or destination when different from that of main body]
[Instructions for sanitary troops, ammunition, supply and pack trains when necessary]
5. [Place of commander or where messages may be sent]

By command of Major Gen. ——— ———:
Chief of Staff.

[How and to whom issued]

---

[a] If a commander is designated for the main body, his name is inserted here.

For advance guards.

Field Orders [Title]
No. — [Place]
[Date and hour]

Troops

(a) Advance Cavalry:
[Commander]
[Troops]
(b) Support:
[Commander]
[Troops]
(c) Reserve—in order of march:
[Troops]
(d) Right (left) Flank Guard:
[Commander]
[Troops]

1. [Information of enemy and of our supporting troops]
2. [Plan of commander]
3. (a) [Instructions for advance cavalry—place and time of departure, roads or country to be covered, special mission]
(b) [Instructions for support—place and time of departure, route, special mission]
(c) [Instructions for reserve—distance at which it is to follow support]
(d) [Instructions for flank guard—place and time of departure, route, special mission]
4. [Instructions for field train—generally to join train of column]
5. [Place of commander or where messages may be sent, location of lines of information]

[Authentication]

[How and to whom issued]

A halt for the night—Camp with outpost.

Field Orders [Title]
No. — [Place]
[Date and hour]

1. [Information of enemy and of our supporting troops, including independent cavalry]
2. [Plan of commander—to encamp or bivouac]
3. (a) [Designation of commander and troops of outpost,[a] general line to be held, special reconnaissance, connection with other outposts, if any]
(b) [Instructions for troops not detailed for outpost duty—location of camp, designation of camp commander,[b] observation of flanks and rear when necessary, lines of information, conduct in case of attack]
4. [Instructions for field train—generally to join troops, though if near enemy, field train of outpost troops may be held in rear]

[Instructions for sanitary troops, ammunition, supply and pack trains, when necessary]

---

[a] Where the advance guard is large the order may direct the advance guard commander to establish the outpost.

[b] Omitted when the chief exercises immediate command of the camp.

5. [Place of commander or where messages may be sent]

[Authentication]

[How and to whom issued]

For outposts.

Field Orders
No.—

[Title]
[Place]
[Date and hour]

Troops

(a) Advance Cavalry:
[Commander]
[Troops]
(b) Supports:[a]
No. 1. [Commander]
[Troops]
No. 2. [Commander]
[Troops]
No. 3. [Commander]
[Troops]
(c) Detached Post:
[Commander]
[Troops]
(d) Reserve:
[Commander]
[Troops]

1. [Information of enemy and of our supporting troops]
2. [Plan of commander—to establish outpost, approximate line of resistance]
3. (a) [Instructions for advance cavalry—contact with enemy, roads or country to be specially watched, special mission]
(b) [Instructions for supports—positions they are to occupy, and sections of line of resistance which they are to hold, intrenching, etc.]
(c) [Instructions for detached post—position to be occupied, duties, amount of resistance]
(d) [Instructions for reserve—location, observation of flanks, conduct in case of attack, duties of special troops]
4. [Instruction for field train if it has accompanied the outpost.]
5. [Place of commander or where messages may be sent, location of lines of information]

[Authentication]

[How and to whom issued] [b]

It is sometimes necessary to issue two outpost orders; the first as above, containing general instructions; the second, issued after an inspection of the line, and containing more definite instructions or involving changes.

For positions in readiness.

Field Orders
No. —

[Title]
[Place]
[Date and hour]

1. [Information of enemy and of our supporting troops]
2. [Plan of commander—to take up a position in readiness at or near —]
3. (a) [Instructions for cavalry—to reconnoiter in direction of enemy, special mission]

---

[a] Numbered from the right.
[b] For small outposts it may be more convenient to write this order without a marginal distribution of troops.

(b) [Instructions for artillery—position or place of assembly]
(c) [Instructions for infantry—position or place of assembly, points to be especially held, reconnaissance]
(d) [Instructions for engineers—position or place of assembly]
(e) [Instructions for signal troops—lines of information]
4. [Instructions for field trains, sanitary troops, ammunition, supply and pack trains—generally to halt at designated localities in rear, ready to move in any direction]
5. [Place of commander or where messages may be sent]

[Authentication]

[How and to whom issued]

For defensive positions.

Field Orders [Title]
No. — [Place]
[Date and hour]

1. [Information of enemy and of our supporting troops]
2. [Plan of commander—to take up a defensive position at or along ——, for the purpose of ——]
3. (a) [Instructions for artillery—position, target, intrenching, etc.]
(b) [Instructions for fighting line—division of front into sections and assignment of troops thereto, intrenching, etc.]
(c) [Instructions for reserve—troops and position]
(d) [Instructions for cavalry—usually to cover with its main force the more exposed flank, a detachment being sent to patrol the other; reconnaissance]
(e) [Instructions for engineers—defensive work, clearing field of fire, preparation of obstacles, opening roads, etc.]
(f) [Instructions for signal troops—to establish lines of information]
4. [Instructions for field train—generally to halt at a designated place]
[Instructions for sanitary troops—location of field hospitals and dressing stations]
[Instructions for ammunition train—generally to take station at a convenient point in rear of the position]
[Instructions for supply train—generally to halt some distance in rear. The pack train may be ordered up to facilitate the ammunition supply]
5. [Place of commander or where messages may be sent]

[Authentication]

[How and to whom issued]

For an attack.

[Title]
Field Orders [Place]
No.— [Date and hour]

1. [Information of enemy and of our supporting troops]
2. [Plan of commander—indicating the general plan of attack, usually to envelop a flank]
3. (a) [Instructions for artillery—position, first target, generally hostile artillery]
(b) [Instructions for secondary attack[a]—commander, troops, direction and objective]

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[a] The term "secondary attack" as used in this form is for convenience only; it is never used in actual orders, as the vigor of an attack might be lessened if the troops knew it was "secondary" only.

(c) [Instructions for main attack—commander, troops, direction and objective]
(d) [Instructions for reserve—commander, troops, position]
(e) [Instructions for cavalry—generally to operate on one or both flanks, or to execute some special mission]
(f) [Instructions for engineers—any special mission]
(g) [Instructions for signal troops—to establish lines of information between the commander and the main and secondary attacks, artillery, reserves, etc.]
4. [Instructions for field train—generally to halt at a designated place]
[Instructions for sanitary troops—location of field hospitals and dressing stations when practicable]
[Instructions for ammunition train—generally to take station at a convenient point in rear]
[Instructions for supply train—generally to halt some distance in rear. The pack train may be ordered up to facilitate the ammunition supply.]
5. [Place of commander or where messages may be sent]

[Authentication]

[How and to whom issued]

NOTE.—In war it is not always possible to issue a complete attack order like the above, disposing of an entire command. In unexpected encounters, for instance, orders must be given as the situation develops.

For a retreat.

Field Orders
No.—

[Title]
[Place]
[Date and hour]

Troops

(a) Leading Troops:
[Commander]
[Troops]

(b) Main Body—in order of march:
[Troops]

(c) Rear Guard:
[Commander]
[Troops]

(d) Right (left) Flank Guard:
[Commander]
[Troops]

(e) Signal Troops:
[Commander]
[Troops]

1. [Information of enemy and of our supporting troops]
2. [Plan of commander—to retire in direction of—]
3. (a) [Instructions for leading troops—place and time of departure, route, special mission]
(b) [Instructions for main body—place and time of departure, route]
(c) [Instructions for rear guard—distance from the main body, or place and time of departure, special mission]
(d) [Instructions for flank guard—place and time of departure, special mission]
(e) [Instructions for signal troops—lines of information]
(x) [Instructions for outpost—when relieved, subsequent duties—usually forming the rear guard]
4. [Instructions for field train, sanitary troops, ammunition, supply and pack trains—place and time of departure, route, escort; these trains are generally some distance ahead of the column.
5. [Place of commander or where messages may be sent]

[Authentication]

[How and to whom issued]

For rear guards.

[Title]
[Place]
[Date and hour]

Field Orders
No.—

Troops

(a) Reserve — in order of march:
[Troops]
(b) Support:
[Commander]
[Troops]
(c) Rear Cavalry:
[Commander]
[Troops]
(d) Right (left) Flank Guard:
[Commander]
[Troops]

1. [Information of enemy and of our supporting troops]
2. [Plan of commander—mission of rear guard]
3. (a) [Instructions for reserve—place and time of departure, or approximate distance from main body, reconnaissance]
(b) [Instructions for support—place and time of departure or distance from reserve, any special reconnaissance]
(c) [Instructions for rear cavalry—place and time of departure, road or country to be covered, special mission]
(d) [Instructions for flank guard—place and time of departure, route, special mission]
4. [Instructions for field train when necessary—usually to join train of main body]

5. [Place of commander or where messages may be sent—location of lines of information]

[Authentication]

[How and to whom issued]

APPENDIX E.

Road space and dimensions of camps.

Combatant troops.	Road space.	+Combat trains.	+Field trains without distance.
Infantry:	*Yards.*	*Yards.*	*Yards.*
Company	40	.....	55
Machine gun company	70	.....	85
Battalion	180	210	285
Regiment	780	[a] 880	1,170
Brigade	2,500	2,800	3,670
Cavalry:			
Troop	90	.....	120
Machine gun troop	120	.....	150
Squadron	400	420	560
Regiment	1,450	1,500	2,000
Brigade	4,500	4,650	6,150
Artillery, light:			
Battery	190	320	380
Battalion	620	1,030	1,250
Regiment	1,350	2,150	2,600
Brigade	2,750	[b] 4,400	5,300
Battery (horse)	250	380	460
Regiment (horse)	.....	[c] 2,640	3,200
Engineers (pioneers):			
Company	100	150	180
Battalion	330	500	610
Signal troops (field):			
Company	100	180	210
Battalion	220	380	460
Sanitation and supply:			
Sanitary troops—			
Ambulance company	.....	.....	280
4 ambulance companies	.....	.....	1,160
Field hospital	.....	.....	160
4 field hospitals	.....	.....	680
Ammunition train—			
5 wagon companies	.....	.....	2,100
Supply train—			
6 wagon companies	.....	.....	2,500
Sanitary reserve	.....	.....	100
Field bakery	.....	.....	230
Pack train	.....	.....	100
		Miles.	*Miles.*
Division		9	15
Division field train of cambatant troops		.....	2.4
Division sanitary troops, ammunition, supply and pack trains, without distance		.....	3.6
Cavalry division		10	15

[a] Half mile. [b] Two and one-half miles. [c] One and one-half miles.

This table is based upon the road spaces occupied by troops at war strength, infantry and cavalry in column of fours, artillery and trains in single column.

The spaces given differ but little from the requirements of drill regulations. On the march, after a command is straightened out on the road, elongation always takes place. In calculating the length of a column, further allowance must therefore be made in accordance with circumstances—sometimes as much as 25 per cent.

For approximate calculations assume 1,600 meters=1 mile; 5 miles=8 kilometers.

Dimensions of camps.

WAR STRENGTH—PYRAMID TENTS.

	Yards.	Acres.
Infantry:		
Regiment	300 by 300	19
Brigade		60
Cavalry:		
Squadron	150 by 284	9
Regiment	530 by 284	33
Brigade		100
Artillery:		
Battalion	280 by 370	22
Regiment	620 by 370	48
Brigade (2 regiments)		100
Engineers (pioneer):		
Battalion (same form as battalion of artillery)	200 by 360	15
Signal troops (field):		
Battalion (same form as battalion of artillery)	140 by 300	9
Sanitary troops:		
4 ambulance companies	240 by 290	15
4 field hospitals	240 by 260	13
Ammunition train	100 by 220	5
Supply train (including sanitary reserve and division field bakery)	140 by 220	7
Pack train	40 by 65	1
Division		400
Cavalry division		400

With same width of streets and the tents of each company in one line (1 man per yard), the dimensions of camps, when shelter tents are used, will be the same as above. By reducing the width of streets the dimensions of camps can be reduced accordingly.

While a division may be encamped on 400 acres, the nature of the terrain will generally render a square mile or more of ground necessary.

Weights, measures, and practicability of slopes.

FORAGE AND SUBSISTENCE.

Kind of ration.	Gross weight of one ration.	Number of rations to a 40,000-pound box car (36 by 8 by 8).	Part of box car required for one ration.	Number of rations to an army wagon (3,000 pounds).	Cubic feet to one ration.	Number of rations to a cubic foot.	Number of rations to a ship's ton (40 cubic feet).	Part of a ship's ton required for one ration.
Forage:	*Pounds.*							
Oats, horse	12	3,333	0.0003	250	0.39	2.564	102.6	0.00974
Oats, mule	9	4,444	.000225	333	.2925	3.42	136.75	.0074
Hay, horse	14	1,571	.000636	175	1.12	.893	[a] 69.69	.0143
Hay, mule	14	1,571	.000636	175	1.12	.893	69.69	.0143
Barley, horse	12	3,333	.0003	250	.312	3.205	128.2	.0078
Barley, mule	9	4,444	.000225	333	.234	4.274	170.9	.00585
Corn, horse	12	3,333	.0003	250	.27	3.703	148.15	.00675
Corn, mule	9	4,444	.000225	333	.2025	4.94	197.53	.00511
Bran, horse	12	2,500	.0004	250	.72	1.39	55.55	.018
Bran, mule	9	3,333	.0003	333	.54	1.85	74.07	.0135
Subsistence:								
Garrison	4.9	8,226	.000122	600	.149	6.73	269	.0037
Field	4.4	9,172	.000109	675	.109	9.17	367	.0027
Travel	4.1	9,818	.000102	750	.129	7.76	311	.0032
Haversack	3.0	13,428	.000075	1,000	.111	9.04	362	.0028
Emergency	.75	53,300	.000019	3,350	.019	53	2,120	.0005

[a] Compressed to 82 cubic feet per ton (2,000 pounds), the minimum density for over-sea shipments.

[See note on p. 222.]

NOTE TO WEIGHTS AND MEASURES.

	Cubic feet.
Oats, to ton	65
Hay, to ton	160
Barley, to ton	52
Corn, to ton	45
Bran, to ton	120
Hay, to ton (baled for over-sea shipment)	82
Capacity of—	
Standard box car	1,800
Army wagon, body	51
Army wagon, to top	196
Ship's ton	40

1 cubic meter = 35.31658 cubic feet.
1 cubic foot = 0.028315 cubic meter.
1 kilogram = 2.20462 pounds (avoirdupois).
1 pound avoirdupois = 0.453592 kilogram.
1 liter = { 1.0565 liquid quarts. / 0.908 dry quart.

TONNAGE.

For purposes of taxation, harbor, and light-house dues, etc., governments measure and register the capacity of ships, the unit of measure being 100 cubic feet, known as a *register ton*.

The *gross tonnage* of a ship is her total internal space capacity, which is completely closed in and protected from sea and weather, measured in register tons.

The net *register tonnage* is the total internal space capacity available for passengers and cargo, and is obtained by subtracting from the gross tonnage the space set aside for crew, engines, coal, and ship's stores. It is usually about 60 per cent of the gross tonnage, depending upon the type of vessel.

Displacement tonnage, the usual measure for a man-of-war, is the weight of ship complete with cargo or contents, when immersed to some fixed depth. In the United States and Great Britain the displacement of a ship is measured in tons of 2,240 pounds; in countries using the metric system it is measured in tons of 1,000 kilograms, or 2,204.6 pounds.

Freight tonnage.—In measuring a ship's cargo, 40 cubic feet of merchandise is considered a ton, but if that bulk exceeds 2,240 pounds (or, in the United States, frequently 2,000 pounds) the freight charge is made by weight. The unit of measure (40 cubic feet) for cargo or for cargo capacity of ships is sometimes called a *ship's ton*.

In estimating the transport capacity of ships allow 3 to 4 gross tons per man and 8 to 10 per animal for ships of more than 5,000 tons, and 4 to 5 per man and 10 to 12 per animal for smaller ships.

This allowance includes rations, water, forage, etc., for the voyage and a margin for reserve supplies. The tonnage allowance for animals is sufficient to provide for vehicles, it being assumed that no vehicle will be separated from its draft animals, and that the integrity of units is preserved as far as possible.

PRACTICABILITY OF SLOPES.

Slopes from 0° to 5° are practicable for *maneuvering* all arms, singly or combined.

On slopes from 5° to 10° all arms can still be maneuvered, but with increasing difficulty.

On slopes from 10° to 15° all arms can be moved up or down.

Slopes from 15° to 30° are practicable for small detachments only.

On slopes from 30° to 45° foot troops can move with difficulty.

War material can be *dragged* up any slope.

Slope fractions.[a]	Degrees.	Operations.
$\frac{1}{100}$	1	Maximum for railroads.
$\frac{1}{20}$	3	Maximum for first-class roads.
$\frac{1}{12}$	5	Practicable for all arms. Somewhat difficult for cavalry to charge descending.
$\frac{1}{10}$	6	Maximum for cavalry charge in mass ascending. Infantry in close order descends with some difficulty.
$\frac{1}{8}$	7	Cavalry can descend at a trot.
$\frac{1}{7}$	8	Not practicable for heavily loaded vehicles.
$\frac{1}{6}$	$9\frac{1}{2}$	Field artillery can no longer maneuver.
$\frac{1}{4}$	14 to 15	Maximum up to which all arms can move.
$\frac{1}{3}$	$18\frac{1}{2}$	Light vehicles can ascend.
$\frac{1}{2}$	26	Individuals and mules can ascend or descend.
$\frac{1}{1}$	45	Foot troops can ascend or descend aided by hands.

[a] Natural tangent of angle between slope and horizontal; read 1 on 50, etc.

APPENDIX G.

FORMS FOR INFANTRY TRENCHES.

1. When intrenching a command, the first objective is to secure a simple standing trench (figs. 2 and 3). If time permits such trenches are enlarged to facilitate communication (figs. 4 and 5), and provided with splinter proof cover (fig. 6).

2. The question of concealment is important. This calls for low flat parapets and narrow trenches. The superior and exterior slopes should be merged, and the latter should make but a small angle with the natural surface of the ground. The surface of the parapet is made to conform in color to the natural surface of the ground.

If a trench is concealed by a screen (fig. 1), the width of the parapet may be reduced to that necessary to resist penetration.

3. An elbow rest is provided, generally 1 foot wide and 1 foot deep, these dimensions to be adjusted to suit individual requirements.

4. When intrenching under fire, cover is first secured in the lying position, each man scooping out a depression for his body and throwing the earth to the front. In this position no excavation can be conveniently made for the legs, but if time permits the original excavation is enlarged and deepened until it is possible to assume a sitting position, with the legs crossed and the shoulder to the parapet. In such a position a man presents a smaller target to shrapnel bullets than in the lying trench and can fire more comfortably and with less exposure than in the kneeling trench. From the sitting position the excavation may be continued until a standing trench is secured.

5. The type profiles shown are those which represent proper solutions of the problem under average conditions. If actual conditions are exceptional, the exceptions should be accounted for in the profile.

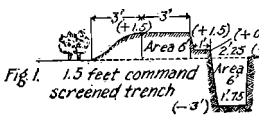


Fig. 1. 1.5 feet command screened trench

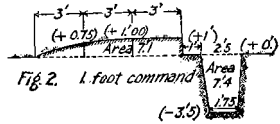


Fig. 2. 1. foot command

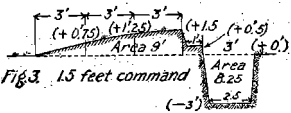


Fig. 3. 1.5 feet command

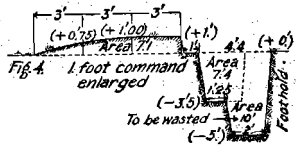


Fig. 4. 1. foot command enlarged

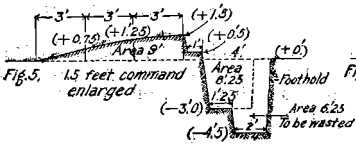


Fig. 5. 1.5 feet command enlarged

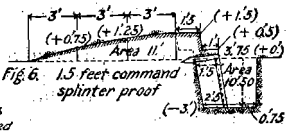


Fig. 6. 1.5 feet command splinter proof

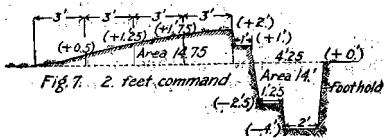


Fig. 7. 2. feet command