FIELD SERVICE REGULATIONS, 1913

FIELD SERVICE REGULATIONS

UNITED STATES ARMY

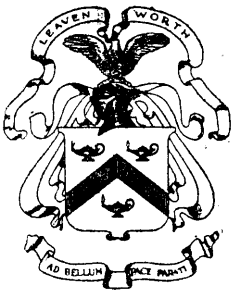
1913

WITH CORRECTIONS TO MAY 21, 1913

SPECIAL
355.0097
3
U586f
1913
c 1

THE GENERAL SERVICE SCHOOLS

LIBRARY



CLASS NUMBER_____

ACCESSION NUMBER_____

Published Under "New Books Received" } R. C. M. W. No._____

For Review See: R. C. M. W. No._____

Title Cards Completed_____

For Translation See Class_____

99—G. S. Schs., Fort Leavenworth—8-15-27—25M

357.0173



LIBRARY
THE GENERAL SERVICE SCHOOLS
FORT LEAVENWORTH, KANSAS

War Department : : : : Office of the Chief of Staff

Field Service Regulations

United States Army

1913

With corrections to May 21, 1913



ashington : : : : Government Printing Office : : : : 1913

WAR DEPARTMENT.

Document No. 363.

Office of the Chief of Staff.

SP COL
355
.00973
U586f
1913
c.1

WAR DEPARTMENT,
OFFICE OF THE CHIEF OF STAFF.
Washington, May 21, 1913.

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:

LEONARD WOOD,
Major General, Chief of Staff.

CONTENTS.

ARTICLE I.—*Organization.*

	Par.
Land forces of the United States	1–3
Units of organization	4–12
Commanders and staffs	13–20
Provost marshal general	21
Supply departments	19–22
Bureau of information for prisoners of war	23
Details of organization	24–34
Division complete	35

ARTICLE II.—*The service of information.*

General principles:	
Military information, information division, etc	36–41
Reconnaissance	42–56
By independent cavalry	43–44
By divisional cavalry	45
By infantry	46
Patrolling	47–54
Reconnaissance in force	55
Aeronautical reconnaissance	56
Messages, reports, field maps, war diaries	57–60
Transmission of information	61–67

ARTICLE III.—*Orders.*

General principles	68–74
Composition of field orders	75–83
Form of field orders	84–93

ARTICLE IV.—*The service of security.*

Par.
General principles..... 94–96
Advance guards:
Duties, strength, and composition; distance from main body..... 97–100
Forming advance guard—Advance guard commander; distribution of troops; advance cavalry; support; reserve; reconnaissance; communication..... 101–107
Advance guard of a small command..... 108
Advance guard of a cavalry command..... 109
Advance guard of a division (independent)..... 110
Security for the head of a retreating force..... 111
Flank guards: Duties, flank marches..... 112–114
Rear guards: Duties, strength, and composition..... 115–116
Forming the rear guard—Rear guard commander, distribution of troops; distances; communication..... 117–120
Rear guard in action..... 121
Rear guard of an advancing force..... 122
Outposts:
Duties, strength, and composition; selection and preparation of outpost positions..... 123–126
Establishing the outpost—Halt order; distribution of troops; changes for the night; advanced cavalry; supports; outguards; sentinels; detached posts; reserve; communication; small commands..... 127–137
Outpost patrols..... 138
Examining posts..... 139
Relieving the outpost..... 140
Cavalry outposts..... 141

ARTICLE V.—*Marches and convoys.*

General principles..... 142
Conduct of marches: Preparation; forming the column; distribution of troops; the start, rate, and length of marches; halts; crossing bridges; fords and other obstacles; crossing streams on ferries; care of troops; camp or bivouac..... 143–153
Marches in peace: Changing station; practice marches..... 154–156
Marches in campaign: Concentration; marches in the presence of the enemy; trains; forced marches; night marches. 157–161

Par.
Convoys: Definition 162–163
Wagon convoys:
Organization; security; distribution of troops; advance guard; main body; rear guard 164–170
Camping 171
Defense of a convoy 172
Attack of a convoy 173
Convoys of prisoners 174
Convoys by rail 175
Convoys by water 176

ARTICLE VI.—*Shelter.*

General principles 177–181
Shelter during mobilization 182
Shelter in campaign: Nature of; selection of camp site; form and dimension of camps; establishing camps; billeting; bivouacs; care of troops 183–190
Shelter during battle 191
Shelter during sieges 192

ARTICLE VII.—*The service of supply.*

General principles 193–196
Sources of supply:
(1) The theater of operations—Requisitions 197–198
(2) The base or depots in rear—Line of communications; movable supply depot; field and supply trains; base 199–202
The Quartermaster Corps 203
Fuel and forage 204
Subsistence:
Rations 205
Methods of subsisting during mobilization 206
Methods of subsisting in the field—How rations are carried; issues; sales stores; extra issues; fresh meats; fresh bread; accountability 207–213
Care of troops—Supervision of food; messing; kitchens 214–216

Ammunition supply: Par.
In general; accountability; ammunition trains; combat trains. 217–220
Infantry. 221–222
Artillery. 223
Cavalry. 224
For a field army. 225
Other supplies. 226–227

ARTICLE VIII.—*Transportation.*

General principles. 228–229
Wagon transportation: Field trains; combat trains; ammunition trains; supply trains. 230–236
Pack transportation. 237
Transportation by rail: How provided; preparation of cars, loading, and entraining; conduct of troops, detraining, and unloading. 238–248
Transportation by water. 249

ARTICLE IX.—*Combat.*

General principles: How decisive results are obtained; advantages of the offensive; advantages of the defensive; preliminaries; fire; ranges; intrenchments. 250–257
The offensive:
Plan and conduct of attack, the order. 258–259
Preparatory stage. 260
Decisive action. 261–262
Final stage and pursuit. 263–264
Action in case of repulse. 265
Night attacks. 266–267
Cavalry versus cavalry. 268–272
The defensive:
Plan of defense—The position; distribution of troops. 273–276
Strengthening the position. 277
Extent of front covered. 278
Conduct of the defense—Preparatory stage; decisive action; final stage; defense at night. 279–283
A position in readiness. 284

ARTICLE X.—*The sanitary service.*

Par.
Personnel, etc.: Composition; insignia; status..... 285–287
Medical Department: Duties; organization; titles of medical officers..... 288–290
Administration of the sanitary service:
Control; inspections; transportation; special details; guards; first-aid packets; identification tags; care of inhabitants of occupied territory..... 291–298
Conduct of the sanitary service in the field—
How divided—
(1) With the mobile forces; ambulance companies; field hospitals; camps; marches; combats; search for wounded..... 299–305
(2) Service of the line of communications..... 306
International Red Cross Convention..... 307

ARTICLE XI.—*The laws of war—Instructions for the government of the armies of the United States in time of war.*

Par.
Stipulations common to each convention adopted at the Second International Peace Conference..... 308
Convention relative to the opening of hostilities..... 309
Convention respecting the laws and customs of war on land.. 310
On belligerents—Qualifications of belligerents (p. 194); prisoners of war (pp. 194–196); the sick and wounded (p. 196).
Hostilities—Means of injuring the enemy, sieges, and bombardments (pp. 196–197); spies (p. 197); flags of truce (p. 197); capitulations (p. 197); armistices (p. 198).
Military authority over the territory of the hostile state (pp. 198–199).
Convention respecting the rights and duties of neutral persons and powers on land..... 311
The rights and duties of neutral powers (pp. 199–200); belligerents interned and wounded tended in neutral territory (p. 200); neutral persons (p. 201); railway material (p. 201).
Convention relative to the laying of automatic submarine mines..... 312
Declaration prohibiting the discharge of projectiles and explosives from balloons..... 313
Table of ratifications and adhesions to foregoing conventions. 314

APPENDICES.

List of flags and pennants by which field armies, etc., are distinguished..... Appendix A.
Form of field message blank..... Appendix B.
Abbreviations and conventional signs authorized for field maps and sketches..... Appendix C.
Forms of field orders..... Appendix D.
Road space and dimensions of camps..... Appendix E.
Weights, measures, and practicability of slopes.... Appendix F.
Forms for infantry trenches..... Appendix G.
Amplifying instructions relative to the administration and supply of troops in war..... Appendix H.

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 corps, a medical 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.[1]

[1] 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).
- 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.[1]

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.

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

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

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 aids, 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 division judge advocate, major.
} 6 clerks, civilian.
1 division quartermaster, lieutenant colonel (par. 30).
1 division surgeon, lieutenant colonel (par. 33).
3 aids, 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 division engineer and division signal officer. When a division acts independently a division 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 division judge advocate, major.
} 3 clerks, civilian.
1 division quartermaster, major (par. 30).
1 division surgeon, major (par. 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 surgeon, 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 aids 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 adjutant.
1 inspector.
1 judge advocate.
1 director of railways.
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.

His technical advisers are:

1 engineer officer (commanding officer, engineer troops, line of communications).
1 quartermaster, quartermaster base group.
1 surgeon, medical base group.
1 ordnance officer, ordnance base group.
1 signal officer, signal base group.

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 division engineers are similar to those of the chief engineer of an army, differing only in scope and degree.

At the close of a campaign, each division engineer and the chief engineer of a 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 the senior signal officer of a 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 seniors 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 seniors of the several supply services, whose duties are performed in comformity with prescribed regulations. Supply officers of a field army, as a rule, have no property accountability, their duties being purely administrative.

Senior officers 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. (Pages 195–196.)

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.*[1]

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 field wagon.

108 total enlisted.

Provisional machine gun company:[2]
- 3 officers (detailed by regimental commander).
- 7 sergeants. } (Detailed and organized as a company.)
- 9 corporals. }
- 92 privates. }

[1] 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.

[2] 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.

PROPERTY OF U. S. ARMY

Provisional machine gun company—Continued.
6 guns.
30 pack mules.[1]
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, 3 as mounted orderlies, etc.).
2 ammunition wagons.
1 field wagon.
4 companies.

15 officers (3 mounted).
440 enlisted men (4 mounted).
2 ammunition wagons.
5 field 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, 4 as mounted orderlies, etc.).
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). }
2 field wagons.
3 battalions.
1 machine gun company.

51 officers (15 mounted).

[1] Grain in battalion headquarters wagons. 30 pack mules for Maxim guns. Machine gun companies armed with the Automatic Machine Rifle, caliber .30, will have 22 pack mules only, which includes 4 extra pack mules.

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.

Regiment—Continued.
1,500 enlisted men (40 mounted).
30 pack mules.
6 ammunition wagons.
18 field wagons.
4 mules (extra team).[1]
(Par. 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 field wagon.
1 pack mule.

4 officers (mounted).
24 enlisted men (8 mounted).

25. II. *Cavalry.*[2]

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 horseshoer.
1 farrier.
1 saddler.
1 wagoner.
2 trumpeters.
64 privates.
2 field wagons.

86 total enlisted.
Provisional machine gun troop:[3]
3 officers (detailed by regimental commander).
7 sergeants.
7 corporals. (Detailed and organized as a troop.)
72 privates.
6 guns.

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

[2] 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.

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

Provisional machine gun troop—Continued.
30 pack mules.[1]
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, 3 as orderlies, etc.).
1 ammunition wagon.
1 field wagon.
4 troops.

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

Regiment:
1 colonel.
1 lieutenant colonel.
1 adjutant. } Captains.
1 quartermaster. }
1 commissary. }
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, 4 as orderlies, etc.).
1 chief musician. }
1 chief trumpeter. }
1 principal musician. }
1 drum major. }
4 sergeants. } Band (36).
8 corporals. }
1 cook. }
11 privates. }
8 privates (detailed, 1 as cook). }
2 field wagons.
3 squadrons.
1 machine gun troop.

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

[1] Grain in squadron headquarters wagons. 30 pack mules for Maxim guns. Machine gun troops armed with the Automatic Machine Rifle will have 22 pack mules only, which includes 4 extra pack mules.

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

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

26. III. *Field artillery.*[1]

Light Artillery:
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. } (16 m).
7 lance corporals }
1 chief mechanic (m).
6 mechanics (m).
1 horseshoer (m).
3 cooks.
3 musicians (m).
127 privates (3 m).
4 guns.
12 caissons.
1 store wagon.
1 forge.
45 riding horses.
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).
8 privates (detailed, 3 as drivers—reel cart, etc., 1 as signaler, 1 as musician, 3 as artillery scouts—5 m).

[1]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 35 privates. These additional men are included in the aggregate enlisted strength of the regiment.
m=Individually mounted.

Light artillery—Continued.
Battalion—Continued.
20 riding horses.
1 reel cart.
1 field wagon.
3 batteries.

18 officers (m).
532 enlisted men (136 m).
12 guns.
36 caissons.
3 store wagons.
3 forges.
1 reel cart.
12 draft horses, extra pairs.
155 riding horses.
13 field wagons.

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, 3 as drivers reel cart, etc., 2 as horseshoers, 1 as farrier, 1 as saddler, 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).
} Band 36 (34 mounted), 1 cook.
68 riding horses.
1 reel cart.
2 field wagons.
2 battalions.

42 officers (m).
2 veterinarians (m).
1,128 enlisted men (330 m).
24 guns.
72 caissons.
6 store wagons.
6 forges.
} 6-horse.
3 reel carts (4-horse).

Light Artillery—Continued.
Regiment—Continued.
24 draft horses, extra pairs.
378 riding horses.
28 field wagons.
4 mules, extra team.
(Par. 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 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 (including lance corporals) and 68 privates are individually mounted, and the number of field wagons is increased to 5.

Totals:
Battery—
5 officers (m).
171 enlisted men (109 m).
4 guns.
12 caissons.
1 store wagon.
1 forge.
112 riding horses.
1 pair (extra) of lead and 1 of wheel horses.
5 field wagons.
Battalion—
18 officers (m).
532 enlisted men (343 m).
12 guns.
36 caissons.
3 store wagons.
3 forges.
1 reel cart.
356 riding horses.
12 draft horses, extra pairs.
16 field wagons.
Regiment—
42 officers (m).
2 veterinarians (m).
1,128 enlisted men (744 m).
24 guns. } 6-horse.
72 caissons. } 6-horse.
6 store wagons. } 6-horse.
6 forges. } 6-horse.
3 reel carts (4-horse).

(m)=individually mounted on a horse.

Totals—Continued.
Regiment—Continued.
24 draft horses, extra pairs.
780 riding horses.
34 field wagons.
4 mules, extra team.
(Par. 34.)
Attached sanitary troops—
3 officers (m).
21 enlisted men (19 mounted).

MOUNTAIN ARTILLERY.[1]

Battery:
1 captain.
2 first lieutenants.
2 second lieutenants.
1 first sergeant (m).
1 quartermaster sergeant (mm).
1 stable sergeant (mm).
7 sergeants (1 as mess sergeant) (mm).
15 corporals (2 as scouts (m), 1 on signal detail, 4 as gunners, 8 as ammunition corporals (4 mm)).
1 chief mechanic (mm).
5 mechanics (mm) (2 detailed as horseshoers).
1 horseshoer (mm).
3 cooks (mm).
3 musicians (m).
127 privates (1 as signaler, 1 as signal driver, 1 as guidon (m), 48 as drivers, 60 as cannoneers, 16 as packers (mm)).
4 guns.
1 forge.
17 horses (12 riding, 2 bell, 3 spare).
178 mules (42 riding, 133 pack, 3 spare).[2]
165 total enlisted (7 (m), and 39 (mm)).

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 (m).
10 corporals (detailed, 3 as agents (m), 1 as signaler and telephone operator (mm), and 6 as artillery scouts (m)).
6 privates (detailed, 1 as musician (m), 1 as signaler (mm), 2 as signal drivers (mm), 2 as packers (mm)).

(m)=individually mounted on a horse.
(mm)=individually mounted on a mule.

[1] 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 6 sergeants, 26 corporals, and 26 privates. These men are included in the aggregate enlisted strength of the regiment.

[2] 3 riding mules of each battery are for enlisted men, Quartermaster's Corps (1 packmaster, 1 assistant packmaster, and 1 cargador).
1 riding mule at regimental headquarters is for an enlisted man Quartermaster's Corps (packmaster).

Battalion—Continued.
22 horses (18 riding, 1 bell, 3 spare).
17 mules (6 riding, 11 pack).

18 officers (m).
515 enlisted men (35 (m), 144 (mm)).
12 guns.
3 forges.
73 horses (54 riding, 7 bell, 12 spare).
551 mules (132 riding, 410 pack, 9 spare).

Regiment:
1 colonel.
1 lieutenant colonel.
1 adjutant. } Captains.
1 quartermaster. } Captains.
1 commissary. } Captains.
1 chaplain.
2 veterinarians.
1 sergeant major (m).
1 quartermaster sergeant (m).
1 commissary sergeant (m).
2 color sergeants (m).
5 mounted orderlies (m).
6 sergeants (detailed, 1 as trumpeter sergeant (m), 2 as agents (m), 1 as signaler and telephone operator and in charge of telephones, 1 as stable sergeant (mm), 1 in charge of artillery scouts (m)).
6 corporals (detailed as artillery scouts) (m).
14 privates (detailed, 1 as signaler, 2 as signal drivers, 2 as farriers, 2 as farrier drivers, 1 as mechanic, 1 as horseshoer, 1 as cook, 4 as packers) (mm).
1 chief musician. } Band.[1]
1 chief trumpeter. } Band.[1]
1 principal musician. } Band.[1]
1 drum major. } Band.[1]
4 sergeants. } Band.[1]
8 corporals. } Band.[1]
1 cook. } Band.[1]
11 privates. } Band.[1]
35 horses (30 riding, 1 bell, 4 spare).
54 mules (16 riding, 28 pack, 10 spare.[2]

42 officers (m).
2 veterinarians (m).
1,094 enlisted men (90 (m), 303 (mm)).
24 guns.
7 forges.

(m)=individually mounted on a horse.
(mm)=individually mounted on a mule.

[1] The band does not accompany mountain artillery when it moves with pack transportation only; for other movements it is furnished the same equipment and transportation as the band of a regiment of field artillery.

[2] 3 riding mules of each battery are for enlisted men, Quartermaster's Corps (1 packmaster, 1 assistant packmaster, and 1 cargador).
1 riding mule at regimental headquarters is for an enlisted man Quartermaster's Corps (packmaster).

Regiment—Continued.
181 horses (138 riding, 15 bell, 28 spare).
1,156 mules (280 riding, 848 pack, 28 spare).
Attached sanitary troops:
1 major.
2 captains and lieutenants.
1 sergeant, first class.
2 sergeants and corporals.
18 privates, first class and privates.
8 pack mules.

3 officers (m).
21 enlisted men (6 m).

IV. *Engineers.*[1]

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 divisions.)

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.
3 wagons (tools, explosives, etc.) (4-mule).
6 pack mules.
2 riding mules.
2 field wagons.

164 total enlisted.

[1] To provide enlisted men for the details indicated, 2 sergeants and 4 privates for each batallion 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 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, 3 as mounted orderlies, etc.).
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 (par. 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.

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 [1] 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.

NONCOMMISSIONED STAFF.

Sergeants-major, senior grade.
Master electricians.
Engineers.

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

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.

When serving as infantry, coast artillery troops have the same allowance of field transportation as corresponding units of infantry.

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

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

II. *Quartermaster Corps.*

30. With a division:

In addition to division quartermaster—

6 majors or captains.
4 quartermaster sergeants (mounted).
6 veterinarians (civilian, mounted).
10 quartermaster corporals (clerks).

Transportation (not attached to organizations): Five wagon companies for the ammunition train, 6 for the supply train; and 1 wagon company and 12 wagons for distribution as follows:

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

For cavalry divisions the organization is the same except that 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.

31. Field bakeries are established at the rate of one per division. They are not attached to moving troops and are assigned no wagon transportation, but transportation may be furnished when necessary to move the bakeries from the railroad to the point of installation. When a line of communications is established, the proper number of field bakeries are assigned to its commander and are operated under his direction.

Field bakeries may be assigned to concentration or other camps of a permanent or semipermanent character.

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.

FIELD COMPANY.

Personnel:
- 1 captain.
- 3 first lieutenants.
- 2 master signal electricians.
- 7 1st-class sergeants.
- 10 sergeants.
- 17 corporals.
- 2 cooks.
- 45 1st-class privates.
- 13 privates.

Transportation:
- 4 wire carts.
- 2 instrument wagons. } To be provided by the Signal Corps.
- 1 kit wagon.
- 85 riding horses.
- 8 draft horses.
- 8 pack mules. } To be provided by the Quartermaster Corps.
- 20 draft mules.
- 2 field wagons.

Total: 4 officers (mounted) and 96 enlisted men (81 mounted).

A field company has 4 field wire sections and 2 pack radio sections. The 4 wire carts (2 horses), the 2 instrument wagons (4 mules), and the 8 pack mules and equipment constitute the combat transportation of a field company.

FIELD BATTALION.

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

Transportation:
- As given for each field company.
- 1 field wagon (for battalion headquarters).
- 10 riding horses.
- 4 draft mules.

Total, 11 officers (mounted) and 198 enlisted men (168 mounted).

Attached sanitary troops:
2 captains and lieutenants.
2 sergeants and corporals.
4 privates (1st class) and privates.

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

The sergeants-major, 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, 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.

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 [1]	.....	.....	1	1	1	1	9	11	12
Total	2	19	80	101	35	97	745	877	978

[1] 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	6	8	.....	.....	.....	.....	.....	8
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 [1]	1	3	4	.....	6	24	.....	24	28
Total	122	248	370	48	62	440	28	468	838

[1] With supply train.

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

Sanitary personnel.

(*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 [1]	.....	.....	1	1	1	1	9	11	12
Total	2	13	57	72	23	64	469	556	628

[1] With supply train.

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

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	2	4	.....	.....	.....	.....	.....	4
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	6	8	.....	.....	.....	.....	.....	8
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 [1]	1	3	4	.....	6	24	.....	24	28
Total	87	311	398	24	38	248	18	266	664

[1] With supply train.

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

(*c*) Auxiliary division:

1 major, division 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, 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	[1] 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	[1] 32

[1] 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		[1] 8		4
Battalion	1	[1] 24		13
Band and noncommissioned staff.				1
Regimental headquarters	2			1
Regimental sanitary troops	1		1	1
Regiment complete	5	[1] 48	1	[2] 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; 2 instrument wagons.	8	3
Battalion headquarters	1			1
Battalion complete	1	12	16	7
Brigade headquarters	2			1
Division headquarters	10			7

[1] A battery combat train consists of 6 caissons, 1 store wagon, 1 battery wagon, 1 pair each of harnessed wheel and lead horses, and the reserve men.

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. When the battery combat trains are united they form the battalion combat trains under the orders of the battalion commanders.

[2] And 4 extra team mules.

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), and the pack 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.

Organization.	Personnel.						
	Officers.		Veterinarians.	Enlisted men.		Civilians, or enlisted personnel, Quartermaster Corps.	Aggregate.
	Combatant.	Sanitary and chaplains.		Combatant.	Sanitary		
The line (including attached sanitary troops).							
Division headquarters [1]	7	4	.....	.....	9	13	33
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	2,256	42	2	2,395
Engineers (1 battalion, 3 companies)	15	3	.....	501	9	.....	528
The Staff.							
Quartermaster Corps (not counted elsewhere)	[2] 6	.....	6	4	.....	47	63
Signal troops (1 battalion, 2 companies, including attached sanitary troops)	11	2	.....	198	6	.....	217
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	625	113	12	17,647	877	478	19,752

[1] 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.

[2] Assuming 2 as majors.

Division, complete—Continued.

Organization.	Animals.					Vehicles.				
	Horses.		Mules.			Guns.	Caissons.	Wagons and carts (combat).	Ambulances.	Wagons (service of supply).
	Mounts.[1]	Draft.	Riding.	Draft.	Pack.					
The line (including attached sanitary troops).										
Division headquarters	28	.....	.....	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)	804	1,368	.....	244	2	48	144	30	.....	59
Engineers (1 battalion, 3 companies)	102	.....	6	68	18	.....	.....	10	.....	7
The Staff.										
Quartermaster Corps (not counted elsewhere)	20	.....	5	116	.....	.....	.....	.....	.....	28
Signal troops (1 battalion, 2 companies, including attached sanitary troops)	188	16	.....	44	16	.....	.....	12	.....	7
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	3,180	1,384	80	3,216	412	48	144	109	48	661

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

Cavalry division, complete.

Organization.	Personnel.						
	Officers.		Veterinarians.	Enlisted men.		Civilians or enlisted personnel, Quartermaster Corps.	Aggregate.
	Combatant.	Sanitary, and chaplains.		Combatant.	Sanitary.		
The line (including attached sanitary troops).							
Division headquarters[1]	7	4	.....	.....	9	13	33
Cavalry (3 brigades, 9 regiments)	453	45	18	10,692	216	6	11,430
Artillery (1 regiment, horse)	41	4	2	1,128	21	.....	1,196
Engineers (1 battalion, mounted)	15	3	.....	309	9	.....	336
The staff.							
Quartermaster Corps (not counted elsewhere)	[2] 6	.....	2	4	.....	48	60
Signal troops (1 battalion, 2 companies, including attached sanitary troops)	11	2	.....	198	6	.....	217
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	533	82	22	12,331	556	311	13,835

[1] 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.

[2] 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.[1]	Draft.	Riding.	Draft.	Pack.					
The line (including attached sanitary troops).										
Division headquarters	31	.....	.....	28	.....	.....	.....	.....	.....	7
Cavalry (3 brigades, 9 regiments)	11,431	.....	.....	1,308	279	.....	.....	27	.....	291
Artillery (1 regiment, horse)	803	684	.....	144	1	24	72	15	.....	35
Engineers (1 battalion, mounted)	314	.....	6	68	18	.....	.....	10	.....	7
The staff.										
Quartermaster Corps (not counted elsewhere)	16	.....	5	72	.....	.....	.....	.....	.....	17
Signal troops (1 battalion, 2 companies, including attached sanitary troops)	188	16	.....	44	16	.....	.....	12	.....	7
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	12,862	700	69	2,544	422	24	72	64	24	554

[1] 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. 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 post offices 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 10 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.[1]

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.

48. The commander determines the *number* and *strength* of patrols and *when* they are to be sent out. It is a cardinal principle

[1] 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.

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, impor-

tant 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 man 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 squads occupies half a yard per man, cavalry in column of fours 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.

AERONAUTICAL RECONNAISSANCE.

56. Military air craft of all kinds will be employed under the direction of the commander of the forces to which they are assigned and the immediate control of the officer commanding the aero organization.

Balloons are classed as free, captive, and dirigible. Free balloons may be used to convey information from besieged places, the return message being sent by radiotelegraphy, carrier pigeons, or otherwise. Free balloons are of little use for any other service, and are not very dependable on account of their uncertainty of movement.

Captive balloons may be used to good advantage as elevated observing stations, wherever aeroplanes are not available for this service. Communication from a captive balloon to the ground should be by telephone; in this way it is possible to connect the

telephone wire with the field telephone lines for direct communication to any headquarters. Man-lifting kites may be similarly used when the wind prevents employment of balloons or aeroplanes.

Large dirigible balloons are of practical value for strategical reconnaissance and to travel great distances; they are also suitable for carrying a number of observers, radio equipment, machine guns and considerable weight of explosives. Large dirigibles are successfully operated only from permanent stations equipped with hangars and gas plant. Aeroplanes are more dependable for field service with a mobile army than dirigible balloons, as the latter require substantial shelter from winds while on the ground.

Military aeroplanes will be employed both for tactical and strategical reconnaissance. Different types of aeroplanes are provided for these two general classes of service. Speed scout aeroplanes intended for strategical reconnaissance capable of flying about 200 miles are designed to carry only one aviator. Scout aeroplanes for tactical reconnaissance are designed to carry an observer in addition to the aviator, radio equipment, and automatic machine rifle. The scout type aeroplane will ordinarily be used for observing and controlling the fire of field artillery on targets which can not be seen from the battery.

Special marks on the machine or special movements of the aeroplane will be arranged from time to time to distinguish between hostile and friendly machines. In the vicinity of the enemy, aeroplanes will travel an altitude of at least 2,000 feet unless protected by fog, haze or approaching darkness.

The usual means of communication from military aeroplanes will be the radiotelegraphy, supplemented by dropping reports, sketches, or marked maps.

Dirigible balloon and aeroplane reconnaissance supplements and extends that made by cavalry. Conditions of darkness, fog, and high winds, limit the use of the former. Maintenance of contact is essential, and this can only be secured by the successive positions of the enemy being followed up by the cavalry after location by aeronautical reconnaissance.

A cleared field suitable for starting and landing aeroplanes will be reserved for this purpose when camping sites of troops are selected.

Whenever the aviation field is not in the vicinity of headquarters, wire communication will be provided and constantly maintained between this field and headquarters.

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.[1]

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.

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.[2] 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, move-

[1] For form of message blank see Appendix B.
[2] For conventional signs see Appendix C.

ments 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,[1] and 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" with messengers are sent to accompany such troops. These officers send to their own commanders all information of military importance to them.

---

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

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 downstream. 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 responsiblity 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 cooperation 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.[1]

[1] 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 farther 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 cavlary 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 the nature of the country requires.

Deserters, suspicious characters, and bearers of flags of truce, the latter blindfolded, 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 support 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 communication 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 daytime; 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 daytime 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 reenforces 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.

Reconnoissance 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 reconnoissance 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 can not 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 24 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 24 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 information 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.[1]

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.*

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.

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

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 the senior 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 condi-

tion 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 15 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 10 minutes every hour—that is, the troops march 50 minutes and then halt 10. 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—5 minutes; the men examine the horses' feet, adjust saddles, etc.

For *artillery* the hourly halts are from 5 to 10 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 afternoon, 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 nightfall 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 distributed. 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 fret-

ting 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 paragraph 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.[1]

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.

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

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

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 are 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 detachment 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 con-

solidated 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 36 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 24 hours can be maintained for three or four days. On such marches the usual hourly halts are made; in addition, a halt of 2 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 24 to 30 hours. On such a march the usual hourly halts are made; in addition halts of 2 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 5½ 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.

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 20 to 30 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.

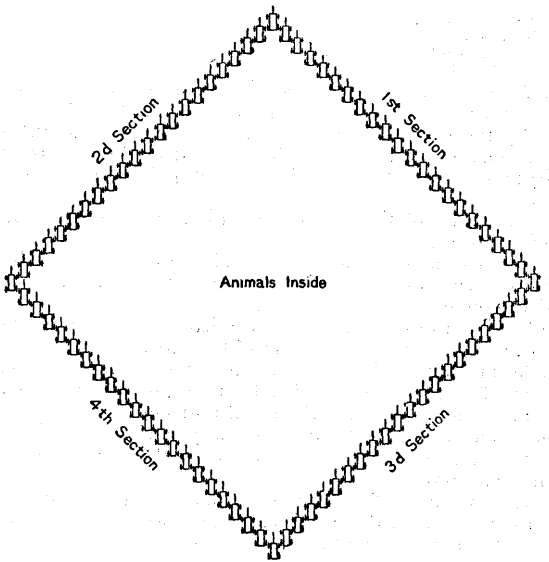
CAMPING.

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



CONVOYS

FORMATION OF DIAMOND-SHAPED CORRAL

SCALE: 1 INCH=120 FEET

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

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 18, War Department, 1911:

"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. *a*. 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.

"*b*. The discharge of troops, animals, and stores from the transports into the boats and their transfer in boats to the shore will be in charge of the navy, and will be carried out at such time and in such order as the army commander may decide.

"4. *a*. An expedition oversea 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.

"*b*. The army authorities shall furnish him with facilities for inspecting the transports as they assemble, for the purpose of ascertaining whether 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. Defects in this direction shall be by him called to the attention of the proper army authority, who shall use every effort to remedy such defects, in accordance with the judgment of the naval convoy commander. The naval convoy commander shall render all possible assistance with the resources at his disposal. In the event that it is found impracticable to remedy defects which, in the opinion of the naval convoy commander, will threaten the safety of the convoy or jeopardize the success of the expedition, such defects shall be reported immediately to their respective departments by the army and navy convoy commanders.

"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. *a.* 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 it is not practicable to refer to higher authority, the army commander shall, after consultation with the naval convoy commander, decide as to such change.

"*b.* 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.

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

"*d.* 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. *a.* 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.

"*b.* 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 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 time, place, and order 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 utmost 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, in accordance therewith, will control the placing of the transports and supply vessels for disembarking the troops, animals, munitions, and stores and will control the loading and unloading of boats and have control over such area of the beach as may be necessary for the proper execution of the above. The naval convoy commander will also control the withdrawal of transports, when discharged, to the harbor and anchorage selected. In case of reembarkation under naval convoy the same general procedure will govern.

"9. It is deemed desirable that the army commanding officer, if convenient, shall 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.

"10. Any existing regulations or orders in conflict or at variance with any of the foregoing rules are rescinded or modified to the extent of such conflict or variance."

77519°—13——8

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.[1]

181. The allowance of tentage is regulated in orders from the War Department. In permanent camps the men are generally sheltered in pyramidal or equivalent tents at the rate of eight to a tent. Wall tents are provided for officers, storage tents for subsistence stores and other quartermaster 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

[1] 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 ground 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 pyramidal or *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 (par. 301). The ammunition and supply trains follow the principles laid down for the camping of convoys.[1]

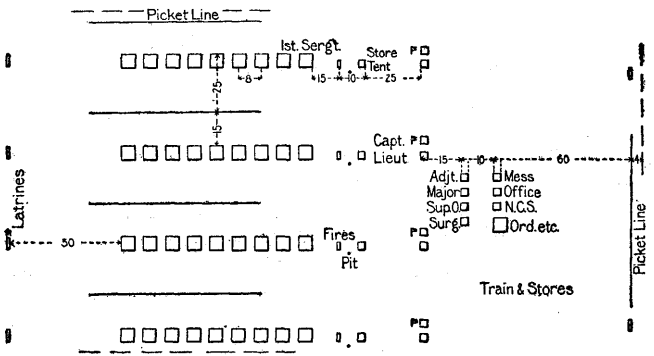
187. Establishing the Camp.—Camp is established pursuant to the *halt order*. This order provides for the outpost, if necessary, and gives instructions for the encampment of the main body. A place of assembly for the sick unable to continue the march is generally designated. When practicable, large commands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

[1] 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

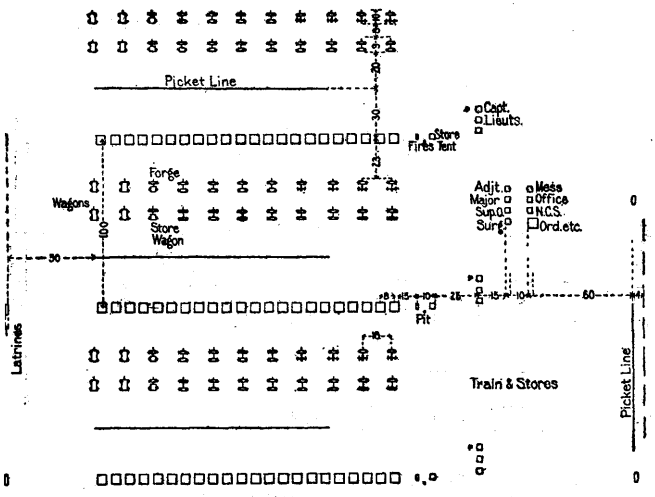


Distances in yards. Dimensions of Camp 150 x 260 yards. For 65 men to the troop. The horses of the commander and staff may be tied to the troop picket lines.

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

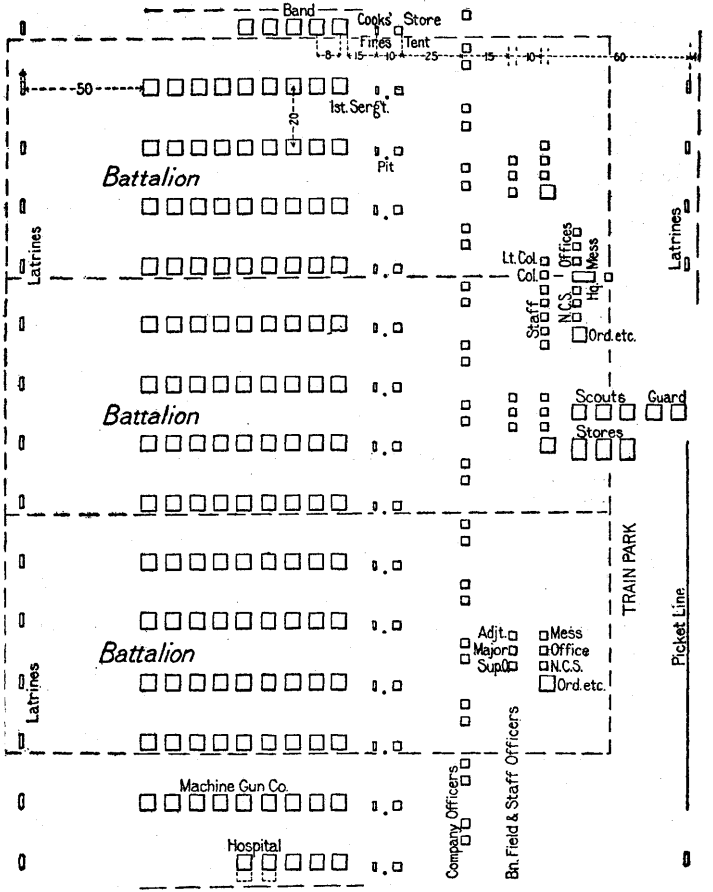


Distances in yards. Dimensions of Camp 280 × 370 yards. War strength.
As a rule the horses of the commander and staff are tied to the battery picket lines.

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 20 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 drianage 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.[1]

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 Corps is charged with the duty of supplying troops with clothing, fuel, forage, camp and garrison equipage, shelter for men and animals, and subsistence and the means of preparing it for use; the Ordnance Department furnishes arms, ammunition, and certain equipments. In addition, the Quartermaster Corps, 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.

---

[1] See also appendix H.

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. (Page 198.)

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* (par. 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.

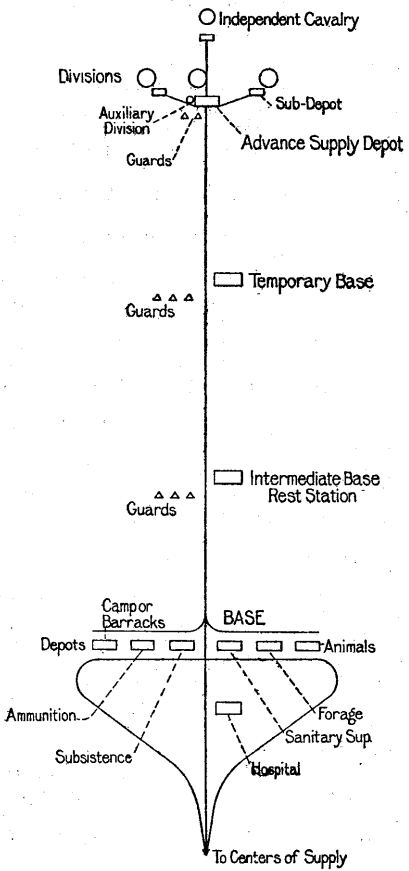
While a well-organized system of requisition is of great service in relieving the transportation, exclusive reliance can not be placed thereon, even in the most productive countries. As soon as the army halts or when it advances slowly, recourse must be had to shipments from the base or depots in rear.

(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.

The head of the line of communications is kept 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

LINE OF COMMUNICATIONS



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.[1] 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 crossroads, 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. (Pars. 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 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.

[1] With auto wagons or trucks carrying 3,000 pounds or more, the difficulties of supply can be greatly reduced.

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 Corps.

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 Corps for the use of troops in the field.

These supplies are divided as follows:

(*a*) For *field service* from 1 to 30 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 Corps, 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 (par. 198) or purchase, and is attended to by the Quartermaster Corps. 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 responsibility 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, except that the use of the haversack ration is enjoined for troops operating beyond the advance depots:

Garrison ration.—For troops in garrison and permanent camps; also for use in time of war except for troops beyond the advance depots.

Haversack ration.—For troops beyond the advance depots.

Filipino ration.—For Philippine Scouts.

Emergency ration.—For troops in active campaign for use 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

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 quartermasters arrange for the supply of fresh beef and vegetables, establish and supervise division bakeries, and make timely requisition on purchasing quartermasters 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 the 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 ten days 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 supply 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.

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. When in the exigencies of the service troops are subsisted on the haversack ration and it is found to be practicable to supplement these stores by local purchases or by shipments, the commanding general may direct, in written orders, the issue in kind, in addition to the haversack ration, of such available articles of food not in excess of the amounts allowed of corresponding articles in the garrison ration.

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 field bakeries (par. 31).

213. Accountability.—Accountability for subsistence stores terminates with their transfer to the divisions, quartermasters in front of the advance depot keeping daily diaries on forms furnished by the Quartermaster Corps 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 oven of baked clay.

When clay banks are convenient, ovens may be excavated therein and used at once.

Kitchen, 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. (Pars. 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., is usually loaded as follows:

Infantry, 22 boxes of rifle ammunition; cavalry, 20 boxes of rifle and 4 of revolver ammunition. Ammunition in the artillery com-

bat 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. (Pars. 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) 100[1].....	20 for revolver when carried.[2]	.....	.....	From combat train.	(a) Total for division about 1,500,000 rounds.
On mules of machine-gun company.	(b) 46,500...	.....	With guns..	Under cover near guns.	From combat or ammunition 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.

[1] When new cartridge belt is issued. The cartridge belt, caliber .30, mounted, holds 80 rifle and 20 revolver cartridges.

[2] If pistol is carried, the number of rounds is 21—7 for each magazine.

This distribution allows 340 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 80 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.[1] 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.

ARTILLERY.

223. During a combat the ammunition expended by the guns is replenished from the caissons of the fifth section, generally during lulls in the action. The empty caissons of the firing battery are

[1] 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.

replenished from caissons of the battery combat train during lulls in action or they may be replaced by caissons of the battery combat train during changes of position, or when in the opinion of the battery commander it is practicable.

The ammunition in the gun limbers is ordinarily maintained as a last reserve. The emergency ammunition on the guns is used only in extreme cases and must be immediately replaced.

Empty caissons returning from the front are refilled from the caissons of the ammunition train, the transfer of ammunition being effected under the direction of the combat train commander. The empty caisons of the ammunition train are sent to the line of communications trains to be refilled. When practicable ammunition from the advance supply depots will be sent by officers belonging to the line of communications to meet the empty ammunition trains at some well understood point in advance of the advance depots. After being refilled the caissons join the trains to which they belong.

The position of the ammunition train is marked by a red flag during the day and by a red lantern at night.

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 during lulls in action, during change of position, or when in the opinion of the battery commander it is practicable. Empty caissons are refilled from caissons of the ammunition train. In exceptional 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.[1]

(*b*) For artillery (1 wagon company, 27 wagons)—25 wagons, each with 25 boxes, and 1 wagon with 12 boxes and artillery stores.

Rations, grain, 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.

[1] 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	340	17,500	464	180	100
At or near the advance supply depot	340	17,500	464	180	100
Total	680	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.

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 unauthorizedvehicles 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. (Pars. 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 grain exclusively. For instance, the baggage and tentage of two companies may be carried on one wagon, the rations and grain 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, including baggage for officers:

	When carried in field trains [1] and no allowance is specified in orders (normal campaign allowance).	
	Wall tents, quarters, and offices.	Personal baggage.
		Pounds.
General	3	700
Lieutenant general	2	600
Major general	2	500
Brigadier general	1	400
Colonel	1	300
Lieutenant colonel, major	1	200
Captain		100
Lieutenant		75
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 (par. 215):		
Battalion	1	300
Regiment	1	350
Brigade	1	350
Division or field army	2	400

	In the field.	
	Wall tents.	Shelter tent halves complete.
For every 3 clerks or veterinarians	1	
For all other civilian employees (except teamsters, packers, wagon masters, horseshoers, blacksmiths, saddlers, cooks, watchmen, pack masters, and cargadors), each		1
For every 15 clerks and veterinarians for mess	1	

[1] 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.

When troops are ordered into the field, they will, unless otherwise directed, take with them the tentage prescribed in the following table for permanent or maneuver camps. The field allowance of tentage is not in addition to that prescribed for permanent or maneuver camps; shelter tents will be taken whether going into the field, or into permanent or maneuver camps.

Allowance of tentage in permanent or maneuver camps, including baggage for officers:

	Wall tents, quarters, and offices.	Personal baggage.
		Pounds.
General	4	2,000
Lieutenant general	3	1,500
Major general	3	1,000
Brigadier general	3	700
Colonel	2	400
Lieutenant colonel, major	2	400
Captain	1	200
Lieutenant	1 (for 2)	150
For each authorized headquarters mess—may be reduced (par. 215):		
Battalion	2	350
Regiment	2	400
Brigade	2	400
Division or field army	3	500

	Pyramidal tents for—		Wall tents for—		Common tents for—		Storage tents.
	Quarters.	Office.	Quarters.	Office.	Latrines.	Storage.	
To every 3 enlisted men when pyramidal tents can not be furnished			1				
To every 8 enlisted men when pyramidal tents can be furnished	1						
For each first sergeant for use as troop, battery, or company office, in addition to allowance for other men		1					

Allowance of tentage in permanent or maneuver camps—Continued.

	Pyramidal tents for—		Wall tents for—		Common tents for		Storage tents.
	Quarters.	Office.	Quarters.	Office.	Latrines.	Storage.	
For each battery, troop, company, machine-gun platoon or machine-gun company, or noncommissioned staff and band					1	1	
For each squadron or battalion headquarters					1		
For each regimental headquarters					1		
For each regimental adjutant				1			
For each regimental commissary				1			1
For each regimental quartermaster				1			2
For each separate brigade, division, or higher unit.	Such storage tents as the commanding general may direct.						

Civilian employees.	Wall tents.	Pyramidal tents.
For every 2 clerks or veterinarians	1	
For every 8 civilian employees (except clerks and veterinarians)		1
For every 3 civilian employees (except clerks and veterinarians) if pyramidal tents are not furnished	1	
For every 15 clerks and veterinarians for mess	2	
For each wagon company for mess	2	
For each pack train for mess	1	

The allowance of tentage, baggage, and transportation for sanitary units will be that prescribed in the Manual for the Medical Department.

A company wagon loaded with the normal campaign allowance of tentage and baggage, cooking utensils, etc., can exceptionally carry on good roads, etc., four days' rations and grain 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. (Pars. 34, 220.)

In addition to ammunition and intrenching tools, the ammunition wagons carry the company litters,[1] three days' grain 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

[1] When the combat trains are not present, these litters are carried on the field trains.

with additional wagons for rations, grain, etc., are organized into wagon companies, and constitute the ammunition train of a division. Ammunition trains are commanded by artillery officers, assisted by infantry or cavalry officers, who will have immediate charge of small-arms ammunition supply in combat. (Pars. 34, 219, 224.)

236. Supply Trains.—Supply trains, normally one for each division, carry a reserve supply of subsistence and grain (generally three days') for the command. They are ordinarily commanded by quartermasters acting under orders from commander of the trains. In campaign, the wagons (6) carrying sanitary supplies, and pack train or trains are generally attached to the division supply train. (Pars. 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 Corps 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 organizatons 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 Corps 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 rotten 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 Corps), 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 Corps.

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 can not 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 impossible 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 can not, 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 preparatory 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 toward 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, 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 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—can not 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 can not 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 can not 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 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 can not 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 un-

loaded 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 incidentally 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 determined 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 can not 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.[1]

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 prependicular to the front for some distance in rear of the 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.

---

[1] 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.

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 sky line, 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 sky line 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 [1] 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

[1] 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.

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 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 adjacent 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 can not 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 organization, 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 is "chief surgeon;" of the line of communications, "surgeon, medical base group;" of a division, "division surgeon;" of a separate brigade, "brigade 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. Care will be taken that Army Regulations concerning vaccination and the administration of the antityphoid fever prophylactic are complied with. 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 can not thus be transported are invoiced to the Quartermaster Corps 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 Corps 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 (par. 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* 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 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 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 reserve medical supply 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 (par. 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 four 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 (par. 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 division surgeons, 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 division 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 division 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.)

307. The International Convention for the Amelioration of the Condition of the Wounded and Sick in Armies in the Field, Geneva, 1906, published in Bulletin No. 6, War Department, February 19, 1913, is as follows:

CHAPTER I.— *The wounded and sick.*

ARTICLE 1. Officers and soldiers, and other persons officially attached to armies, shall be respected and taken care of when wounded or sick, by the belligerent in whose power they may be, without distinction of nationality.

Nevertheless, a belligerent who is compelled to abandon sick or wounded to the enemy shall, as far as military exigencies permit, leave with them a portion of his medical personnel and material to contribute to the care of them.

ART. 2. Except as regards the treatment to be provided for them in virtue of the preceding article, the wounded and sick of an army who fall into the hands of the enemy are prisoners of war, and the general provisions of international law concerning prisoners are applicable to them.

Belligerents are, however, free to arrange with one another such exceptions and mitigations with reference to sick and wounded prisoners as they may judge expedient; in particular they will be at liberty to agree—

To restore to one another the wounded left on the field after a battle;

To repatriate any wounded and sick whom they do not wish to retain as prisoners, after rendering them fit for removal or after recovery.

To hand over to a neutral State, with the latter's consent, the enemy's wounded and sick to be interned by the neutral State until the end of hostilities.

ART. 3. After each engagement the commander in possession of the field shall take measures to search for the wounded, and to insure protection against pillage and maltreatment both for the wounded and for the dead.

He shall arrange that a careful examination of the bodies is made before the dead are buried or cremated.

ART. 4. As early as possible each belligerent shall send to the authorities of the country or army to which they belong the military identification marks or tokens found on the dead, and a nominal roll of the wounded or sick who have been collected by him.

The belligerents shall keep each other mutually informed of any internments and changes, as well as of admissions into hospital and deaths among the wounded and sick in their hands. They shall collect all the articles of personal use, valuables, letters, etc., which are found on the field of battle or left by the wounded or sick who have died in the medical establishments or units, in order that such objects may be transmitted to the persons interested by the authorities of their own country.

ART. 5. The competent military authority may appeal to the charitable zeal of the inhabitants to collect and take care of, under his direction, the wounded or sick of armies, granting to those who respond to the appeal special protection and certain immunities.

CHAPTER II.—*Medical units and establishments.*

ART. 6. Mobile medical units (that is to say, those which are intended to accompany armies into the field) and the fixed establishments of the medical service shall be respected and protected by the belligerents.

ART. 7. The protection to which medical units and establishments are entitled ceases if they are made use of to commit acts harmful to the enemy.

ART. 8. The following facts are not considered to be of a nature to deprive a medical unit or establishment of the protection guaranteed by article 6—

1. That the personnel of the unit or of the establishment is armed, and that it uses its arms for its own defense or for that of the sick and wounded under its charge.

2. That in default of armed orderlies the unit or establishment is guarded by a piquet or by sentinels furnished with an authority in due form.

3. That weapons and cartridges taken from the wounded and not yet handed over to the proper department are found in the unit or establishment.

CHAPTER III.—*Personnel.*

ART. 9. The personnel engaged exclusively in the collection, transport, and treatment of the wounded and the sick, as well as in the administration of medical units 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 treated as prisoners of war.

These provisions apply to the guard of medical units and establishments under the circumstances indicated in article 8 (2).

ART. 10. The personnel of voluntary aid societies, duly recognized and authorized by their Government, who may be employed in the medical units and establishments of armies, is placed on the same footing as the personnel referred to in the preceding article, provided always that the first-mentioned personnel shall be subject to military law and regulations.

Each State shall notify to the other, either in time of peace or at the commencement of, or during the course of hostilities, but in every case before actually employ-

ing them, the names of the societies which it has authorized, under its responsibility, to render assistance to the regular medical service of its armies.

ART. 11. A recognized society of a neutral country can only afford the assistance of its medical personnel and units to a belligerent with the previous consent of its own Government and the authorization of the belligerent concerned.

A belligerent who accepts such assistance is bound to notify the fact to his adversary before making any use of it.

ART. 12. The persons designated in articles 9, 10, and 11, after they have fallen into the hands of the enemy, shall continue to carry on their duties under his direction.

When their assistance is no longer indispensable, they shall be sent back to their army or to their country at such time and by such route as may be compatible with military exigencies.

They shall then take with them such effects, instruments, arms, and horses as are their private property.

ART. 13. The enemy shall secure to the persons mentioned in article 9, while in his hands, the same allowances and the same pay as are granted to the persons holding the same rank in his own army.

CHAPTER IV.—*Material.*

ART. 14. If mobile medical units fall into the hands of the enemy they shall retain their material, including their teams, irrespectively of the means of transport and the drivers employed.

Nevertheless, the competent military authority shall be free to use the material for the treatment of the wounded and sick. It shall be restored under the conditions laid down for the medical personnel, and so far as possible at the same time.

ART. 15. The buildings and material of fixed establishments remain subject to the laws of war, but may not be diverted from their purpose so long as they are necessary for the wounded and the sick.

Nevertheless, the commanders of troops in the field may dispose of them, in case of urgent military necessity, provided they make previous arrangements for the welfare of the wounded and sick who are found there.

ART. 16. The material of voluntary aid societies which are admitted to the privileges of the convention under the conditions laid down therein is considered private property, and, as such, to be respected under all circumstances, saving only the right of requisition recognized for belligerents in accordance with the laws and customs of war.

CHAPTER V.—*Convoys of evacuation.*

ART. 17. Convoys of evacuation shall be treated like mobile medical units, subject to the following special provisions—

1. A belligerent intercepting a convoy may break it up if military exigencies demand, provided he takes charge of the sick and wounded who are in it.

2. In this case, the obligation to send back the medical personnel, provided for in article 12, shall be extended to the whole of the military personnel detailed for the transport or the protection of the convoy, and furnished with an authority in due form to that effect.

The obligation to restore the medical material, provided for in article 14, shall apply to railway trains and boats used in internal navigation, which are specially arranged for evacuations, as well as to the material belonging to the medical service for fitting up ordinary vehicles, trains, and boats.

Military vehicles, other than those of the medical service, may be captured with their teams.

The civilian personnel and the various means of transport obtained by requisition, including railway material and boats used for convoy, shall be subject to the general rules of international law.

CHAPTER VI.—*The distinctive emblem.*

ART. 18. As a compliment to Switzerland, the heraldic emblem of the red cross on a white ground, formed by reversing the Federal colors, is retained as the emblem and distinctive sign of the medical service of armies.

ART. 19. With the permission of the competent military authority this emblem shall be shown on the flags and armlets (brassards), as well as on all the material belonging to the medical service.

ART. 20. The personnel protected in pursuance of articles 9 (par. 1), 10, and 11 shall wear, fixed to the left arm, an armlet (brassard) with a red cross on a white ground delivered and stamped by the competent military authority, and accompanied by a certificate of identity in the case of persons who are attached to the medical service of armies, but who have not a military uniform.

ART. 21. The distinctive flag of the convention shall only be hoisted over those medical units and establishments which are entitled to be respected under the convention, and with the consent of the military authorities. It must be accompanied by the national flag of the belligerent to whom the unit or establishment belongs.

Nevertheless, medical units which have fallen into the hands of the enemy, so long as they are in that situation, shall not fly any other flag than that of the Red Cross.

ART. 22. The medical units belonging to neutral countries which may be authorized to afford their services under the conditions laid down in article 11 shall fly, along with the flag of the convention, the national flag of the belligerent to whose army they are attached.

The provisions of the second paragraph of the preceding article are applicable to them.

ART. 23. The emblem of the red cross on a white ground and the words "Red Cross" or "Geneva Cross" shall not be used, either in time of peace or in time of war, except to protect or to indicate the medical units and establishments and the personnel and material protected by the convention.

CHAPTER VII.—*Application and carrying out of the convention.*

ART. 24. The provisions of the present convention are only binding upon the contracting powers in the case of war between two or more of them. These provisions shall cease to be binding from the moment when one of the belligerent powers is not a party to the convention.

ART. 25. The commanders in chief of belligerent armies shall arrange the details for carrying out the preceding articles, as well as for cases not provided for, in accordance with the instructions of their respective Governments and in conformity with the general principles of the present convention.

ART. 26. The signatory Governments will take the necessary measures to instruct their troops, especially the personnel protected, in the provisions of the present convention, and to bring them to the notice of the civil population.

CHAPTER VIII.—*Prevention of abuses and infractions.*

ART. 27. The signatory Governments, in countries the legislation of which is not at present adequate for the purpose, undertake to adopt or to propose to their legislative bodies such measures as may be necessary to prevent at all times the employ-

ment of the emblem or the name of Red Cross or Geneva Cross by private individuals or by societies other than those which are entitled to do so under the present convention, and in particular for commercial purposes as a trade-mark or trading mark.

The prohibition of the employment of the emblem or the names in question shall come into operation from the date fixed by each legislature, and at the latest five years after the present convention comes into force. From that date it shall no longer be lawful to adopt a trade-mark or trading mark contrary to this prohibition.

ART. 28. The signatory Governments also undertake to adopt, or to propose to their legislative bodies, should their military law be insufficient for the purpose, the measures necessary for the repression in time of war of individual acts of pillage and maltreatment of the wounded and sick of armies, as well as for the punishment, as an unlawful employment of military insignia, or the improper use of the Red Cross flag and armlet (brassard) by officers and soldiers or private individuals not protected by the present convention.

They shall communicate to one another, through the Swiss Federal Council, the provisions relative to these measures of repression at the latest within five years from the ratification of the present convention.

General provisions.

ART. 29. The present convention shall be ratified as soon as possible. The ratification shall be deposited at Berne.

When each ratification is deposited a *procès-verbal* shall be drawn up, and a copy thereof certified as correct shall be forwarded through the diplomatic channel to all the contracting powers.

ART. 30. The present convention shall come into force for each power six months after the date of the deposit of its ratification.

ART. 31. The present convention, duly ratified, shall replace the convention of the 22d August, 1864, in relations between the contracting States.

The convention of 1864 remains in force between such of the parties who signed it who may not likewise ratify the present convention.

ART. 32. The present convention may be signed until the 31st December next by the powers represented at the conference which was opened at Geneva on the 11th June, 1906, as also by the powers, not represented at that conference, which signed the convention of 1864.

Such of the aforesaid powers as shall have not signed the present convention by the 31st December, 1906, shall remain free to accede to it subsequently. They shall notify their accession by means of a written communication addressed to the Swiss Federal Council, and communicated by the latter to all the contracting powers.

Other powers may apply to accede in the same manner, but their request shall only take effect if within a period of one year from the notification of it to the Federal Council no objection to it reaches the council from any of the contracting powers.

ART. 33. Each of the contracting powers shall be at liberty to denounce the present convention. The denunciation shall not take effect until one year after the written notification of it has reached the Swiss Federal Council. The council shall immediately communicate the notification to all the other contracting parties.

The denunciation shall only affect the power which has notified it.

In witness whereof the plenipotentiaries have signed the present convention and have affixed thereto their seals.

Done at Geneva the 6th July, 1906, in a single copy, which shall be deposited in the archives of the Swiss Confederation, and of which copies certified as correct shall be forwarded to the contracting powers through the diplomatic channel

(here follow the signatures of the plenipotentiaries), Great Britain signed under reserve of articles 23, 27 and 28. Persia under reserve of article 18.

The ratifications of the following States have up to the present been deposited:

Great Britain.	Denmark.	Servia.
Siam.	Brazil.	Norway.
United States.	Luxemburg.	Honduras.
Russia.	Belgium.	Portugal.
Italy.	Spain.	Roumania.
Switzerland.	Austria-Hungary.	Sweden.
Congo.	Japan and Corea.	Guatemala.
German Empire.	Netherlands.	Bulgaria.
Mexico.	Chile.	

The following accessions have been notified:

Nicaragua.	Colombia.	Costa Rica.
Venezuela.	Cuba.	Salvador.
Turkey.	Paraguay.	

ARTICLE XI.

THE LAWS OF WAR.

Instructions for the Government of Armies of the United States in Time of War.

308. The following rules are extracts from conventions adopted at the Second International Peace Conference, held at The Hague, 1907, and revoke those parts of General Order No. 100, Adjutant General's Office, 1863, that are contrary to or covered by them. The remainder of said general order remains in force with the same effect and to the same extent as if these rules had not been adopted.

The conventions above referred to are published in full in Bulletin No. 6, War Department, February 19, 1913. Articles of each of these conventions stipulate that—

(*a*) The provisions of the present convention do not apply except to the contracting powers, and then only if all the belligerents are parties to the convention.

(*b*) Nonsignatory powers may adhere to the present convention.

309. CONVENTION RELATIVE TO THE OPENING OF HOSTILITIES.[1]

* * * * *

ARTICLE I. The contracting powers recognize that hostilities between themselves must not commence without previous and explicit warning, in the form either of a reasoned declaration of war or of an ultimatum with conditional declaration of war.

ART. II. The existence of a state of war must be notified to the neutral powers without delay, and shall not take effect in regard to them until after the receipt of a notification, which may, however, be given by telegraph. Neutral powers, nevertheless, can not rely on the absence of notification if it is clearly established that they were in fact aware of the existence of a state of war.

ART. III. Article I of the present convention shall take effect in case of war between two or more of the contracting powers.

Article II is binding as between a belligerent power which is a party to the convention and neutral powers which are also parties to the convention.

* * * * *

[1] See paragraph 314.

310. CONVENTION RESPECTING THE LAWS AND CUSTOMS OF WAR ON LAND.[1]

* * * * *

SECTION I.—ON BELLIGERENTS.

CHAPTER I.—*The qualifications of belligerents.*

ARTICLE I. The laws, rights, and duties of war apply not only to armies, but also to militia and volunteer corps fulfilling the following conditions:—

1. To be commanded by a person responsible for his subordinates;
2. To have a fixed distinctive emblem recognizable at a distance;
3. To carry arms openly; and
4. To conduct their operations in accordance with the laws and customs of war.

In countries where militia or volunteer corps constitute the army, or form part of it, they are included under the denomination "army."

ART. II. The inhabitants of a territory which has not been occupied, who, on the approach of the enemy, spontaneously take up arms to resist the invading troops without having had time to organize themselves in accordance with Article I, shall be regarded as belligerents if they carry arms openly and if they respect the laws and customs of war.

ART. III. The armed forces of the belligerent parties may consist of combatants and noncombatants. In the case of capture by the enemy, both have a right to be treated as prisoners of war.

CHAPTER II.—*Prisoners of war.*

ART. IV. Prisoners of war are in the power of the hostile Government, but not of the individuals or corps who capture them.

They must be humanely treated.

All their personal belongings, except arms, horses, and military papers, remain their property.

ART. V. Prisoners of war may be interned in a town, fortress, camp, or other place, and bound 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 which necessitate the measure continue to exist.

ART. VI. The State may utilize the labour of prisoners of war according to their rank and aptitude, officers excepted. The tasks shall not be excessive and shall have no 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.

Work done for the State is paid at the rates in force for work of a similar kind done by soldiers of the national army, or, if there are none in force, at a rate according to the work executed.

When the work is for other branches of the public service or for private persons the conditions are settled in agreement with the military authorities.

The wages of the prisoners shall go toward improving their position, and the balance shall be paid them on their release, after deducting the cost of their maintenance.

ART. VII. The Government into whose hands prisoners of war have fallen is charged with their maintenance.

---

[1] See paragraph 314.

In the absence of a special agreement between the belligerents, prisoners of war shall be treated as regards board, lodging, and clothing on the same footing as the troops of the Government who captured them.

ART. VIII. Prisoners of war shall be 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 such measures of severity as may be considered necessary.

Escaped prisoners who are retaken before being able to rejoin their own army or before leaving the territory occupied by the army which captured them are liable to disciplinary punishment.

Prisoners who, after succeeding in escaping, are again taken prisoners, are not liable to any punishment on account of the previous flight.

ART. IX. Every prisoner of war is bound to give, if he is questioned on the subject, his true name and rank, and if he infringes this rule, he is liable to have the advantages given to prisoners of his class curtailed.

ART. X. Prisoners of war may be set at liberty on parole if the laws of their country allow, and, in such cases, they are bound, on their personal honour, scrupulously to fulfil, both toward their own Government and the Government by whom they were made prisoners, the engagements they have contracted.

In such cases their own Government is bound neither to require of nor accept from them any service incompatible with the parole given.

ART. XI. 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 the prisoner to be set at liberty on parole.

ART. XII. Prisoners of war liberated on parole and recaptured bearing arms against the Government to whom they had pledged their honour, or against the allies of that Government, forfeit their right to be treated as prisoners of war, and can be brought before the courts.

ART. XIII. Individuals who follow an army without directly belonging to it, such as newspaper correspondents and reporters, sutlers and contractors, who fall into the enemy's hands and whom the latter thinks expedient to detain, are entitled to be treated as prisoners of war, provided they are in possession of a certificate from the military authorities of the army which they were accompanying.

ART. XIV. An inquiry office for prisoners of war is instituted on the commencement of hostilities in each of the belligerent States, and, when necessary, in neutral countries which have received belligerents in their territory. It is the function of this office to reply to all inquiries about the prisoners. It receives from the various services concerned full information respecting internments and transfers, releases on parole, exchanges, escapes, admissions into hospital, deaths, as well as other information necessary to enable it to make out and keep up to date an individual return for each prisoner of war. The office must state in this return the regimental number, name and surname, age, place of origin, rank, unit, wounds, date and place of capture, internment, wounding, and death, as well as any observations of a special character. The individual return shall be sent to the Government of the other belligerent after the conclusion of peace.

It is likewise the function of the inquiry office to receive and collect all objects of personal use, valuables, letters, etc., found on the field of battle or left by prisoners who have been released on parole, or exchanged, or who have escaped, or died in hospitals or ambulances, and to forward them to those concerned.

ART. XV. Relief societies for prisoners of war, which are properly constituted in accordance with the laws of their country and with the object of serving as the channel for charitable effort shall receive from the belligerents, for themselves and their duly accredited agents every facility for the efficient performance of their humane task within the bounds imposed by military necessities and administrative regulations. Agents of these societies may be admitted to the places of

internment for the purpose of distributing relief, as also to the halting places of repatriated prisoners, if furnished with a personal permit by the military authorities, and on giving an undertaking in writing to comply with all measures of order and police which the latter may issue.

ART. XVI. Inquiry offices enjoy the privilege of free postage. Letters, money orders, and valuables, as well as parcels by post, intended for prisoners of war, or dispatched by them, shall be exempt from all postal duties in the countries of origin and destination, as well as in the countries they pass through.

Presents and relief in kind for prisoners of war shall be admitted free of all import or other duties, as well as of payments for carriage by the State railways.

ART. XVII. Officers taken prisoners shall 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.

ART. XVIII. Prisoners of war shall enjoy complete liberty in the exercise of their religion, including attendance at the services of whatever church they may belong to, on the sole condition that they comply with the measures of order and police issued by the military authorities.

ART. XIX. 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 shall be observed regarding death certificates as well as for the burial of prisoners of war, due regard being paid to their grade and rank.

ART. XX. After the conclusion of peace, the repatriation of prisoners of war shall be carried out as quickly as possible.

CHAPTER III.—*The sick and wounded.*

ART. XXI. The obligations of belligerents with regard to the sick and wounded are governed by the Geneva Convention.

SECTION II.—HOSTILITIES.

CHAPTER I.—*Means of injuring the enemy, sieges, and bombardments.*

ART. XXII. The right of belligerents to adopt means of injuring the enemy is not unlimited.

ART. XXIII. In addition to the prohibitions provided by special conventions, it is especially forbidden—

(*a*) To employ poison or poisoned weapons;

(*b*) To kill or wound treacherously individuals belonging to the hostile nation or army;

(*c*) To kill or wound an enemy who, having laid down his arms, or having no longer means of defence, has surrendered at discretion;

(*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, as well as the distinctive badges of the Geneva Convention;

(*g*) To destroy or seize the enemy's property, unless such destruction or seizure be imperatively demanded by the necessities of war;

(*h*) To declare abolished, suspended, or inadmissible in a court of law the rights and actions of the nationals of the hostile party.

A belligerent is likewise forbidden to compel the nationals of the hostile party to take part in the operations of war directed against their own country, even if they were in the belligerent's service before the commencement of the war.

ART. XXIV. Ruses of war and the employment of measures necessary for obtaining information about the enemy and the country are considered permissible.

ART. XXV. The attack or bombardment, by whatever means, of towns, villages, dwellings, or buildings which are undefended is prohibited.

ART. XXVI. The officer in command of an attacking force must, before commencing a bombardment, except in cases of assault, do all in his power to warn the authorities.

ART. XXVII. In sieges and bombardments all necessary steps must be taken to spare, as far as possible, buildings dedicated to religion, art, science, or charitable purposes, historic monuments, hospitals, and places where the sick and wounded are collected, provided that they are not being used at the time for military purposes.

It is the duty of the besieged to indicate the presence of such buildings or places by distinctive and visible signs, which shall be notified to the enemy beforehand.

ART. XXVIII. The pillage of a town or place, even when taken by assault, is prohibited.

CHAPTER II.—*Spies.*

ART. XXIX. A person can only be considered a spy when, acting clandestinely or on false pretences, he obtains or endeavours to obtain information in the zone of operations of a belligerent, with the intention of communicating it to the hostile party.

Thus, 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, carrying out their mission openly, intrusted with the delivery of despatches intended either for their own army or for the enemy's army. To this class belong likewise persons sent in balloons for the purpose of carrying despatches and, generally, of maintaining communications between the different parts of an army or a territory.

ART. XXX. A spy taken in the act shall not be punished without previous trial.

ART. XXXI. A spy who, after rejoining the army to which he belongs, is subsequently captured by the enemy, is treated as a prisoner of war, and incurs no responsibility for his previous acts of espionage.

CHAPTER III.—*Flags of truce.*

ART. XXXII. A person is regarded as bearing a flag of truce who has been authorized by one of the belligerents to enter into communication with the other, and who advances bearing a white flag. He has a right to inviolability, as well as the trumpeter, bugler or drummer, the flag-bearer and interpreter who may accompany him.

ART. XXXIII. The commander to whom a flag of truce is sent is not in all cases obliged to receive it.

He may take all the necessary steps to prevent the envoy taking advantage of his mission to obtain information.

In case of abuse, he has the right to detain the envoy temporarily.

ART. XXXIV. The envoy loses his right of inviolability if it is proved in a clear and incontestable manner that he has taken advantage of his privileged position to provoke or commit an act of treachery.

CHAPTER IV.—*Capitulations.*

ART. XXXV. Capitulations agreed upon between the contracting parties must take into account the rules of military honour.

Once settled, they must be scrupulously observed by both parties.

CHAPTER V.—*Armistices.*

ART. XXXVI. 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.

ART. XXXVII. An armistice may be general or local. The first suspends the military operations of the belligerent States everywhere; the second only between certain fractions of the belligerent armies and within a fixed radius.

ART. XXXVIII. An armistice must be notified officially and in good time to the competent authorities and to the troops. Hostilities are suspended immediately after the notification, or on the date fixed.

ART. XXXIX. It rests with the contracting parties to settle, in the terms of the armistice, what communications may be held in the theater of war with the inhabitants and between the inhabitants of one belligerent State and those of the other.

ART. XL. 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.

ART. XLI. A violation of the terms of the armistice by private persons acting on their own initiative only entitles the injured party to demand the punishment of the offenders or, if necessary, compensation for the losses sustained.

SECTION III.—MILITARY AUTHORITY OVER THE TERRITORY OF THE HOSTILE STATE.

ART. XLII. Territory is considered occupied when it is 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.

ART. XLIII. The authority of the legitimate power having in fact passed into the hands of the occupant, the latter shall take all the measures in his power to restore, and ensure, as far as possible, public order and safety, while respecting, unless absolutely prevented, the laws in force in the country.

ART. XLIV. A belligerent is forbidden to force the inhabitants of territory occupied by it to furnish information about the army of the other belligerent, or about its means of defence.

ART. XLV. It is forbidden to compel the inhabitants of occupied territory to swear allegiance to the hostile power.

ART. XLVI. Family honour and rights, the lives of persons, and private property, as well as religious convictions and practice, must be respected.

Private property can not be confiscated.

ART. XLVII. Pillage is formally forbidden.

ART. XLVIII. If, in the territory occupied, the occupant collects the taxes, dues, and tolls imposed for the benefit of the State, he shall do so, as far as is possible, in accordance with the rules of assessment and incidence in force, and shall in consequence be bound to defray the expenses of the administration of the occupied territory to the same extent as the legitimate Government was so bound.

ART. XLIX. If, in addition to the taxes mentioned in the above article, the occupant levies other money contributions in the occupied territory, this shall only be for the needs of the army or of the administration of the territory in question.

ART. L. No general penalty, pecuniary or otherwise, shall be inflicted upon the population on account of the acts of individuals for which they can not be regarded as jointly and severally responsible.

ART. LI. No contribution shall be collected except under a written order, and on the responsibility of a commander in chief.

The collection of the said contribution shall only be effected as far as possible in accordance with the rules of assessment and incidence of the taxes in force.

For every contribution a receipt shall be given to the contributors.

ART. LII. Requisitions in kind and services shall not be demanded from municipalities 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.

Contributions in kind shall as far as possible be paid for in cash; if not, a receipt shall be given and the payment of the amount due shall be made as soon as possible.

ART. LIII. 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 property belonging to the State which may be used for military operations.

All appliances, whether on land, at sea, or in the air, adapted for the transmission of news, or for the transport of persons or things, exclusive of cases governed by naval law, depots of arms, and, generally, all kinds of ammunition of war, may be seized, even if they belong to private individuals, but must be restored and compensation fixed when peace is made.

ART. LIV. Submarine cables connecting an occupied territory with a neutral territory shall not be seized or destroyed except in the case of absolute necessity. They must likewise be restored and compensation fixed when peace is made.

ART. LV. The occupying State shall be regarded only as administrator and usufructuary of public buildings, real estate, forests, and agricultural estates belonging to the hostile State, and situated in the occupied country. It must safeguard the capital of these properties and administer them in accordance with the rules of usufruct.

ART. LVI. The property of municipalities, that of institutions dedicated to religion, charity and education, the arts and sciences, even when State property, shall be treated as private property.

All seizure of, destruction or wilful damage done to institutions of this character, historic monuments, works of art and science, is forbidden and should be made the subject of legal proceedings.

311. CONVENTION RESPECTING THE RIGHTS AND DUTIES OF NEUTRAL POWERS AND PERSONS IN WAR ON LAND.[1]

* * * * *

[Translation.]

CHAPTER I.— *The rights and duties of neutral powers.*

ARTICLE I. The territory of neutral powers is inviolable.

ART. II. Belligerents are forbidden to move troops or convoys of either munitions of war or supplies across the territory of a neutral power.

ART. III. Belligerents are likewise forbidden to:

(*a*) Erect on the territory of a neutral power a wireless-telegraphy station or other apparatus for the purpose of communicating with belligerent forces on land or sea;

(*b*) Use any installation of this kind established by them before the war on the territory of a neutral power for purely military purposes, and which has not been opened for the service of public messages.

---

[1] See paragraph 314.

ART. IV. Corps of combatants can not be formed nor recruiting agencies opened on the territory of a neutral power to assist the belligerents.

ART. V. A neutral power must not allow any of the acts referred to in Articles II to IV to occur on its territory.

It is not called upon to punish acts in violation of its neutrality unless the said acts have been committed on its own territory.

ART. VI. The responsibility of a neutral power is not engaged by the fact of persons crossing the frontier separately to offer their services to one of the belligerents.

ART. VII. A neutral power is not called upon to prevent the export or transport, on behalf of one or other of the belligerents, of arms, munitions of war, or, in general, of anything which can be of use to an army or a fleet.

ART. VIII. A neutral power is not called upon to forbid or restrict the use on behalf of the belligerents of telegraph or telephone cables or of wireless telegraphy apparatus belonging to it or to companies or private individuals.

ART. IX. Every measure of restriction or prohibition taken by a neutral power in regard to the matters referred to in Articles VII and VIII must be impartially applied by it to both belligerents.

A neutral power must see to the same obligation being observed by companies or private individuals owning telegraph or telephone cables or wireless telegraphy apparatus.

ART. X. The fact of a neutral power resisting, even by force, attempts to violate its neutrality can not be regarded as a hostile act.

CHAPTER II.—*Belligerents interned and wounded tended in neutral territory.*

ART. XI. A neutral power which receives on its territory troops belonging to the belligerent armies shall intern them, as far as possible, at a distance from the theater of war.

It may keep them in camps and even confine them in fortresses or in places set apart for this purpose.

It shall decide whether officers can be left at liberty on giving their parole not to leave the neutral territory without permission.

ART. XII. In the absence of a special convention to the contrary, the neutral power shall supply the interned with the food, clothing, and relief required by humanity.

At the conclusion of peace the expenses caused by the internment shall be made good.

ART. XIII. A neutral power which 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.

ART. XIV. A neutral power may authorize the passage into its territory of the sick and wounded belonging to the belligerent armies, on condition that the trains bringing them shall carry neither personnel nor war material. In such a case, the neutral power is bound to take whatever measures of safety and control are necessary for the purpose.

The sick or wounded brought under these conditions into neutral territory by one of the belligerents, and belonging to the hostile party, must be guarded by the neutral power so as to insure their not taking part again in the military operations. The same duty shall devolve on the neutral State with regard to wounded or sick of the other army who may be committed to its care.

ART. XV. The Geneva Convention applies to sick and wounded interned in neutral territory.

CHAPTER III.—*Neutral persons.*

ART. XVI.—The nationals of a State which is not taking part in the war are considered as neutrals.

ART. XVII. A neutral can not avail himself of his neutrality:

(*a*) If he commits hostile acts against a belligerent;

(*b*) If he commits acts in favour of a belligerent, particularly if he voluntarily enlists in the ranks of the armed force of one of the parties.

In such a case, the neutral shall not be more severely treated by the belligerent as against whom he has abandoned his neutrality than a national of the other belligerent State could be for the same act.

ART. XVIII. The following acts shall not be considered as committed in favour of one belligerent in the sense of Article XVII, letter (*b*):

(*a*) Supplies furnished or loans made to one of the belligerents, provided that the person who furnishes the supplies or who makes the loans lives neither in the territory of the other party nor in the territory occupied by him, and that the supplies do not come from these territories;

(*b*) Services rendered in matters of police or civil administration.

CHAPTER IV.—*Railway material.*

ART. XIX. 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 where and to the extent that it is 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 an equal extent material coming from the territory of the belligerent power.

Compensation shall be paid by one party or the other in proportion to the material used, and to the period of usage.

* * * * *

312. CONVENTION RELATIVE TO THE LAYING OF AUTOMATIC SUBMARINE CONTACT MINES.[1]

* * * * *

ARTICLE I. It is forbidden:

1. To lay unanchored automatic contact mines, except when they are so constructed as to become harmless one hour at most after the person who laid them ceases 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.

ART. II. It is forbidden to lay automatic contact mines off the coast and ports of the enemy, with the sole object of intercepting commercial shipping.

ART. III. 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 within a limited time, and, should they cease to be under surveillance, to notify

[1] See paragraph 314.

the danger zones as soon as military exigencies permit, by a notice addressed to shipowners, which must also be communicated to the Governments through the diplomatic channel.

ART. IV. Neutral powers which 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 inform ship-owners, by a notice issued in advance, where automatic contact mines have been laid. This notice must be communicated at once to the Governments through the diplomatic channel.

ART. V. At the close of the war, the contracting powers undertake to do their utmost to remove the mines which they had 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.

ART. VI. The contracting powers which do not at present own perfected mines of the pattern contemplated in the present convention, and which, consequently, could not at present carry out the rules laid down in Articles I and III, undertake to convert the *matériel* of their mines as soon as possible, so as to bring it into conformity with the foregoing requirements.

* * * * *

313. DECLARATION PROHIBITING THE DISCHARGE OF PROJECTILES AND EXPLOSIVES FROM BALLOONS.[1]

* * * * *

The contracting powers agree to prohibit, for a period extending to the close of the third peace conference, the discharge of projectiles and explosives from balloons or by other new methods of a similar nature.

The present declaration is only binding on the contracting powers in case of war between two or more of them.

It shall cease to be binding from the time when, in a war between the contracting powers, one of the belligerents is joined by a noncontracting power.

* * * * *

---

[1] See paragraph 314.

314. TABLE OF RATIFICATIONS AND ADHESIONS TO SUCH OF THE CONVENTIONS AS ARE MENTIONED IN THE TEXT.

[A convention may be ratified by a signatory power or adhered to by a nonsignatory power. In the table the following nomenclature is used: R=Ratified. RR=Ratified with reservations. A=Adhered to.]

	Par. 309. Convention relating to the opening of hostilities.	Par. 310. Convention concerning the laws and customs of war on land.	Par. 311. Convention concerning the rights and duties of neutral powers and persons in case of war on land.	Par. 312. Convention relating to the laying of automatic submarine contact mines.	Par. 313. Declaration relative to prohibiting the throwing down of projectiles and explosives from balloons.
Germany	R	RR	R	RR	.....
United States	R	R	R	R	R
Austria-Hungary	R	RR	R	R	.....
Belgium	R	R	R	R	R
Bolivia	R	R	R	.....	R
China	A	.....	A	.....	R
Cuba	.....	R	R	.....	.....
Denmark	R	R	R	R	.....
France	R	R	R	RR	.....
Great Britain	R	R	.....	RR	R
Guatemala	R	R	R	R	.....
Haiti	R	R	R	R	R
Japan	R	R	R	R	.....
Luxemburg	R	R	R	R	R
Mexico	R	R	R	R	.....
Netherlands	R	R	R	R	R
Nicaragua	A	A	A	A	A
Norway	R	R	R	R	R
Panama	R	R	R	R	R
Portugal	R	R	R	.....	R
Roumania	R	R	R	R	.....
Russia	R	RR	R	.....	.....
Salvador	R	R	R	R	R
Siam	R	R	R	RR	R
Sweden	R	R	R	.....	.....
Switzerland	R	R	R	R	R



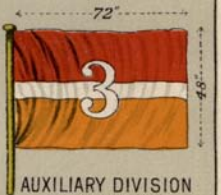
FIELD ARMY.



DIVISION.



CAVALRY DIVISION.



AUXILIARY DIVISION
3rd FIELD ARMY.



BRIGADE.



ARTILLERY BRIGADE.

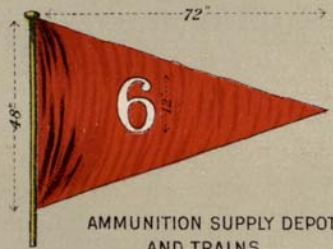


CAVALRY BRIGADE.

SUPPLY.



QUARTERMASTER
SUPPLY DEPOTS AND TRAIN



AMMUNITION SUPPLY DEPOTS
AND TRAINS.

A. HOEN & CO. BALTO. MD.

U. S. ARMY FIELD MESSAGE.	No.	Sent by.	Time.	Rec'd by.	Time.	Check.
	(These spaces for Signal Operators only.)					

Communicated by **Buzzer, Phone, Telegraph, Wireless, Lantern, Hello, 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.)

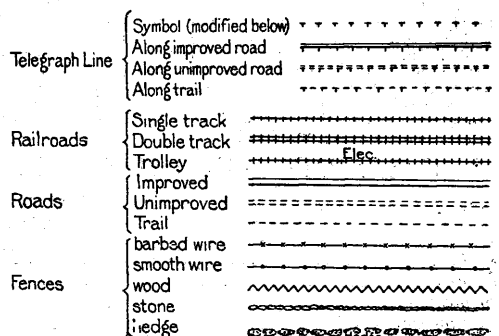
When sent.....*No*.....
Rate of speed.....
Name of messenger.....
When and by whom rec'd.....

This Envelope will be Returned to Bearer.

APPENDIX C.

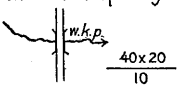
The following abbreviations are authorized for use on field maps and sketches. When these words are used they must be written in full or abbreviated as shown. The abbreviations must not be used for words other than those in the table. Words not in the table are not as a rule abbreviated.

abut.	abutment	pk	plank
B.S.	blacksmith shop	P.O.	post office
bot.	bottom	Pt.	point
Cr	creek	Q.	quarry
cul.	culvert	q.p.	queen post
cult.	cultivated	R.	river
d.	deep	R.H.	round house
D.S.	drug store	R.R.	railroad
E.	east	S.	south
f.	fordable	s.	steel
Ft	fort	S.H.	school house
gir	girder	S.M	saw mill
G.M	grist mill	Sta.	station
G.S.	general store	st.	stone
i.	iron	str	stream
I	island	tres.	trestle
jc.	junction	T.G	toll gate
kp.	king post	tn	truss
L.	lake	W.T.	water tank
Ldg.	landing	W.W	water works
Mt	mountain	W.	west
N	north	wd.	wide
n.f.	not fordable	w.	wood.
P.	pier		



Bridge 

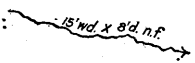
Indicate character and span by abbreviations.

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.

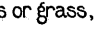
House ▪ Church ± School house =S.H.

Woods 

Orchards Cultivated Land Cult.

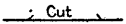
If boundary lines are fences they are indicated as such.

Brush, crops or grass, important as cover or forage Brush, corn, grass, etc.

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.[1]

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.[2] (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.

---

[1] See map of Fort Leavenworth, Kans., and vicinity.
[2] 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 [1]
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.[2]
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.

[1] 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.

[2] 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

1. [Information of enemy and of our supporting troops]
2. [Plan of commander]

(a) Independent Cavalry:
[Commander]
[Troops]

3. (a) [Instructions for independent cavalry—place and time of departure, roads or country to be covered, special mission]

(b) Advance Guard:
[Commander]
[Troops]

(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) Main Body—in order of march:
[Commander][1]

(c) [Instructions for main body—distance at which it is to follow the advance guard, or place and time of departure]

(d) Right [left] Flank Guard:
[Commander]
[Troops]

(d) [Instructions for flank guard—place and time of departure, route, special mission]

(e) Signal Troops:
[Commander]
[Troops]

(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]

---

[1] If a commander is designated for the main body, his name is inserted here.

For advance guards.

Field Orders
No. —

[Title]
[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
No. —

[Title]
[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,[1] 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,[2] 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]

---

[1] Where the advance guard is large the order may direct the advance guard commander to establish the outpost.
[2] 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: [1]
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] [2]

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]
(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]

---

[1] Numbered from the right.

[2] For small outposts it may be more convenient to write this order without a marginal distribution of troops.

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.

Field Orders [Title]
No. — [Place]
[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[1]—commander, troops, direction and objective]
(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.]

---

[1] 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.

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.

Field Orders
No.—

[Title]
[Place]
[Date and hour]

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]

[How and to whom issued]

[Authentication]

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	[1] 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	[2] 4,400	5,300
Battery (horse)	250	380	460
Regiment (horse)	.....	[3] 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 campanies	.....	.....	2,100
Supply train—			
6 wagon companies	.....	.....	2,500
Sanitary reserve	.....	.....	100
Pack train	.....	.....	100
Field bakery	230	.....	.....

[1] Half mile. [2] Two and one-half miles. [3] One and one-half miles.

Road space and dimensions of camps—Continued.

Combatant troops.	+Combat trains.	+Field trains without distance.
	Miles.	*Miles.*
Division	9	15
Division field train of combatant troops		2.4
Division sanitary troops, ammunition, supply and pack trains, without distance		3.6
Cavalry division	10	15

This table is based upon the road spaces occupied by troops at war strength, infantry in column of squads, 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—PYRAMIDAL 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)	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.

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	[1] 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

[1] Compressed to 82 cubic feet per ton (2,000 pounds), the minimum density for over-sea shipments.

[See note on next page.]

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.[1]	Degrees.	Operations.
$\frac{1}{60}$	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.

[1] 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.

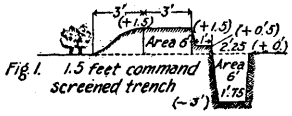


Fig. 1. 1.5 feet command screened trench

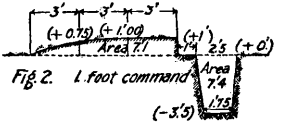


Fig. 2. 1. foot command

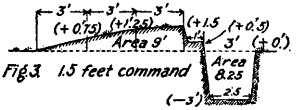


Fig. 3. 1.5 feet command

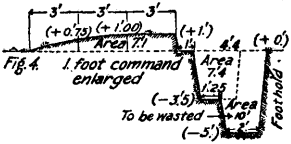


Fig. 4. 1. foot command enlarged

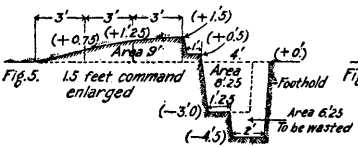


Fig. 5. 1.5 feet command enlarged

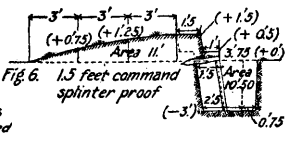


Fig. 6. 1.5 feet command splinter proof

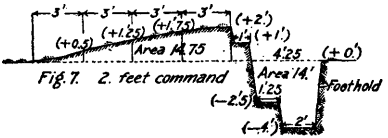


Fig. 7. 2. feet command

APPENDIX H.

AMPLIFYING INSTRUCTIONS RELATIVE TO THE ADMINISTRATION AND SUPPLY OF TROOPS IN WAR.

ARTICLE I.

1. In time of war the activities of the military establishment embrace—
   (*a*) The service of the interior.
   (*b*) The service of the theater of operations.
2. The service of the interior is carried on by—
   (*a*) Department commanders.
   (*b*) Bureau chiefs, having for this purpose general depots of supply, general hospitals, arsenals, etc.
3. The service of the theater of operations is carried on by the commander of the field forces. The theater of operations is divided into two zones:
   (*a*) The zone of the line of communications.
   (*b*) The zone of the advance.
   The service of the interior functions both in peace and in war; that of the theater of operations in war only.

ARTICLE II.

THE SERVICE OF THE INTERIOR.

GENERAL FUNCTIONS.

4. The function of the service of the interior, in time of war, is to supply the commander of the field forces with the means necessary to the accomplishment of his mission.

This service is carried on by the bureau chiefs and the department commanders. Their respective operations are directed and coordinated by the Secretary of War through the medium of the Chief of Staff.

In general the functions of the bureau chiefs and the department commander are as follows:

5. *Bureau chiefs.*—They are the technical advisers of the Secretary of War and the Chief of Staff on all matters connected with the operations of their respective departments or corps throughout the entire military establishment.

They are kept informed of the plans of the field forces and recommend the steps to be taken to insure the successful execution of these plans as far as their respective corps or departments are concerned.

They control directly and are responsible for the efficient operation of the general depots of supply, general hospitals, arsenals, and other military establishments placed under their orders.

They are charged with the accumulation of the necessary supplies and *matériel* and with forwarding the same, in accordance with regulations, to the point where they come under the control of the department commander, the commander of the field forces, or the commander of the port of embarkation.

They formulate estimates for the necessary appropriations to carry on the operations of their respective departments or corps.

6. *Department commander.*—He is responsible for the recruitment, training, and equipment of all military forces, not specially excepted, within the limits of his department, and for their mobilization and dispatch to concentration camps.

He is advised by the War Department where troops of his command are to be sent, the time at which they should arrive, and the commander to whom they should report. He is responsible for their movement, transportation, and supply while en route.

He keeps the War Department informed at all times of the state of preparedness of the troops under his command.

He is responsible for the defense of all portions of his department, except where an independent commander has been assigned by War Department orders. In this latter case the responsibility of the department commander does not extend to the area of operations of the independent commander.

MOBILIZATION AND CONCENTRATION.

7. *A mobilization camp or rendezvous* is a place, in the territory from which they are drawn, where troops are assembled to be raised to war strength, equipped, and prepared for service.

The mobilization of the Regular Army will be effected at the permanent stations. Recruits, after being armed, equipped, and trained at the recruit depots, will be forwarded to their respective organizations.

The mobilization of the Organized Militia and Volunteers will be effected at mobilization camps.

The general instructions relative to mobilization are published in regulations or in War Department orders.

Department commanders are responsible that all military organizations leave mobilization points or mobilization camps: (1) With the full equipment required by existing orders; (2) with sufficient rations and forage to fully supply them while en route; and (3) with five days' rations and forage for use after their arrival at the concentration camps.

A concentration camp is a place, near the scene of intended operations or near an embarkation point, where troops are assembled for immediate use against the enemy or for transport to an over-sea theater of operations.

The command of troops at a concentration camp lies with the department commander in whose territory the camp is situated, unless these troops pertain or are assigned to a commander not under the department commander's orders prior to the concentration. Such a commander deals directly with the War Department. In cases where it is desired to make an exception to the foregoing rule, or where doubt may exist, the authority ordering the concentration should define in orders upon whom the command falls and to whom he reports.

8. *Concentration camp at a port of embarkation.*—In case the concentration is ordered at a port of embarkation already provided by higher authority with a staff for receiving and forwarding troops, the responsibility for camp sites and facilities and the necessary supplies devolves upon the commanding officer of the port of embarkation. Under these circumstances the necessary staff officers will be sent in advance by the commander of the troops ordered to the camp to cooperate in making the detailed arrangements. But in case no such permanent staff is provided at the port of embarkation, the staff of the command concerned must make all provisions for receiving, camping, and supplying the troops. The necessary supplies are obtained by ordinary methods of requisition or purchase.

9. *Concentration at a point near the scene of intended operations.*—In case the concentration is ordered at a point near the scene of intended operations when troops

are assembled for immediate use against the enemy, the necessary line of communications personnel will, if practicable, be ordered by the War Department to report to the commander of these troops, and will be sent in advance by him to the camp to make all preliminary arrangements for receiving, camping, and supplying the troops. If, however, no additional personnel for the line of communications is provided by the War Department, the commander of the troops concerned designates the necessary personnel from his own command and sends them ahead to make the preliminary arrangements.

10. *Duties of the commander of the port of embarkation.*—The duties of the commander of the port of embarkation are as follows:

(*a*) To arrange camps for the troops at or near the port of embarkation.

(*b*) To accumulate supplies for the maintenance of the expeditionary force while at the port of embarkation and until its arrival at the port of debarkation.

(*c*) To make all detailed arrangements for the prompt detraining of troops and matériel and for their subsequent embarkation.

(*d*) To see that the ships furnished him by the Quartermaster Corps are properly fitted out for use as transports.

(*e*) To operate and maintain the military shipping and traffic between his port and the over sea base through a superintendent of transport service who is a member of his staff.

(*f*) To command all administrative groups assigned to the port of embarkation and to be directly responsible to the War Department for the efficient and economical direction of their operations.

The commander of the port of embarkation, his staff and personnel, are not subject to the orders of the commander of the troops at the concentration camp nor the latter commander to the orders of the former.

The commander of the port of embarkation prepares the schedules for the distribution and embarkation of troops, *matériel*, and supplies on transports. The commander of the camp issues the orders necessary to carry out these schedules. Under all conditions these schedules will be made only after consultation with the commander of the troops involved.

When a landing or disembarkation in the face of opposition is anticipated, the distribution and plan of embarkation will be made to suit the tactical requirements of the situation, and in case of a difference of opinion the final decision will rest with the commander of the troops. When no opposition to landing is expected, the final decision will rest with the commander of the port of embarkation.

Cordial cooperation between these commanders is essential to the efficient performance of their respective duties.

ARTICLE III.

THE THEATER OF OPERATIONS.

11. In the theater of operations the functions of the War Department and of the various commanders are, in general, as follows:

The War Department designates the commander of the field forces, assigns him a definite mission, prescribes the zone under his command, and supplies him with the means necessary to the accomplishment of his mission.

The commander of the field forces exercises supreme authority over all military and administrative matters within the zone assigned him, organizing the means placed at his disposal so as to insure efficiency, and directing and controlling all operations necessary to the accomplishment of his mission.

The commander of the line of communications is responsible to the commander of the field forces for the efficient operation and defense of the line of communications and directs and controls all administrative and staff services attached thereto.

ARTICLE IV.

THE ZONE OF THE LINE OF COMMUNICATIONS.

GENERAL.

12. Lines of communications are operated only in time of war. Many conditions will be met in the actual operation of a line of communications which it is impossible to foresee in formulating regulations. These regulations are not meant to restrain in any way the initiative of the commander of the field forces or the commander of the line of communications in the adoption of such modifications or amplifications as he may deem necessary.

The mission of the tactical units and administrative groups assigned to the line of communications is to relieve the combatant field forces, as far as possible, from every consideration except that of defeating the enemy. Their personnel comprises groups from every branch of the Army.

A line of communications is established for each important force about to engage in field operations involving a movement from a base. The point at which the base of a line of communications is to be established is fixed in War Department orders, upon recommendation of the commander of the field forces. The personnel for the line of communications is sent ahead by the commander of the force to secure the base and to make all arrangements for receiving, supplying, and forwarding the troops. If no additional personnel for this purpose has been assigned to the commander by higher authority, he details the necessary officers and men from the force under his command.

The zone of the line of communications embraces all territory from and including the base to the point or points where contact is made with the trains of the combatant field forces. The activities of the line of communications personnel are in general limited to this zone, except that lines of information are extended to connect with the headquarters of the field force and that sanitary transport columns, special supply trains, and evacuation hospitals will be pushed forward beyond this zone when necessary.

As the amount of transportation with the field forces is necessarily limited, contact by such forces with the line of communications can be maintained for only a short distance to the rear of the fighting elements. With animal transportation this distance is assumed to be two marches, but if auto trucks are employed it can be greatly increased. It is the duty of the commander of the line of communications to advance this line from time to time so as to maintain contact with the trains of the field forces.

A line of communications is not organized when a force can safely occupy a territory without military operations of an extensive character. In this case administration and supply naturally and properly follow the same general principles as with troops in the home country, and the locally organized means of transport are employed. Certain phases of a military occupation may require the organization of a line of communications on a restricted scale within certain areas, in which case the general principles herein outlined will serve as a guide for such organization.

13. *Command.*—The commander of the line of communications is a subordinate of the commander of the field forces. All troops, military establishments, and personnel in the zone of the line of communications are under control of its commander, except such as may be specially exempted by War Department orders. He is responsible for the defense of the line of communications and for the government of that portion of the zone placed under military control.

14. *Administration and control.*—For administration and control the line of communications is organized as follows:

(*a*) A service of defense.
(*b*) A supply, sanitary, and telegraph service.
(*c*) A service of military railways.

The senior staff officer of each group of the base section of the supply, sanitary, and telegraph service and the commanding officer of the engineer troops of the line of communications are the technical advisers of the commander of the line of communications on all matters relating to the operation of their respective corps within the zone of the line of communications. The organization of line of communications' personnel is shown in table appended hereto. The strength shown in this table is for the service of a force comprising one division, but a slightly increased strength should suffice for a much larger force.

Staff officers belonging to organizations assigned to the service of defense have no responsibilities in connection with the operations of the supply, sanitary, and telegraph service other than those directly connected with the organizations to which they are assigned.

Upon arrival at the base all persons under War Department orders or authority to join the field forces come at once under the orders of the commander of the line of communications and report their arrival at headquarters.

Service of Defense.

15. Suitable troops are assigned to duty under the commander of the line of communications and are charged under his orders with the defense of the line of communications. This territory is ordinarily divided into districts, each under a separate commander, who is responsible for the defense of his own district. These commanders have no control over properly authorized movements along the line of communications, of personnel, animals, or matériel, except in cases of imminent danger from the enemy. They are then responsible that traffic is stopped until, in their opinion, it may be safely resumed, or until orders from superior authority are received. The action taken will be at once reported by telegraph to the chief of staff of the line of communications. Troops, ammunition, or supplies proceeding to the front are not to be diverted for the use of the line of communications troops except by authority of the commander of the line of communications.

When armored trains are used, their crews will form part of the line of communications troops and are under the direct orders of the commander of the district in which they are operating. Railway traffic is not to be interfered with by the use of armored trains except in the face of imminent danger from the enemy.

16. *Supply, sanitary, and telegraph service.*—The commander of the line of communications is in charge of all supply and sanitary matters and of the construction and maintenance of all lines of information within the limits of his command.

He is responsible that the reserve of supplies on hand in his various depots shall be maintained between the maximum and minimum amounts fixed by the commander of the field forces. He furnishes the War Department a copy of a list of the stores required, showing the maximum and minimum amounts to be kept on hand, and keeps the War Department informed of the amount of funds needed for the prosecution of his work. He forwards his requisitions for supplies not procurable in the theater of operations to the War Department or to such depots as the War Department may designate for furnishing particular supplies.

For purposes of control and coordination of the supply, sanitary, and telegraph service, a line of communications is ordinarily divided into sections, as follows: A *base section* and an *advance section*, each with an assistant chief of staff in charge competent to issue orders in the name of the commander of the line of communications. In certain cases, due to the prolongation of the line of communications,

one or more *intermediate sections* may be required. An advance section is required at the head of each important route of supply diverging from the base.

The operations of a base or intermediate section extend up to, but do not include the depots, sanitary units, and telegraph stations of the next section in advance. Each section provides for the supply of the line of communications troops within its limits.

If no service of military railways be organized it is the function of the base section to provide and operate the necessary means of transport or to make shipments by commercial means between the base and the section next in advance. It is the function of intermediate sections under similar conditions to connect in the same manner with the section next in advance.

All personnel necessary to the proper functioning of the supply, sanitary, and telegraph service report at the base for assignment to duty. Here advance and intermediate sections are organized and sent forward as required.

17. *Base section.*—The assistant chief of staff with the base section is charged with coordinating the work of the quartermaster, medical, engineer, ordnance, and signal base groups.

He is informed of the probable requirements of the advance and intermediate sections, transmits this information to the officers in charge of the various groups, and issues the orders for meeting these requirements.

All requisitions are viséed by the assistant chief of staff of the base section before being transmitted to the point from which supplies are furnished.

All supplies (except those for the service of military railways) shipped into the base either for use of the field forces or for the troops of the line of communications are consigned to the "Quartermaster," "Surgeon," etc., at the base.

18. *Advance section.*—The assistant chief of staff with the advance section is charged with coordinating the work of the quartermaster, medical, engineer, ordnance, and signal advance groups.

The operations of these groups extend to and include the refilling points of the division supply trains and, for the evacuation of the wounded, the field hospitals. The signal advance group establishes and maintains lines of information with the headquarters of the field forces.

The positions of the advance depot and of the refilling points are fixed from time to time by the commander of the field forces. The headquarters of the advance section is at the advance depot, and it is to the assistant chief of staff at this point that the commanders in advance send all their requisitions for supplies and requests for the evacuation of their wounded.

Ordinarily the advance depot will be on a line of railroad, and as near the field forces as possible. In consequence, it is more or less exposed to the enemy and therefore an undue accumulation of supplies at this point is undesirable.

The allowance of transportation fixed by regulations for the field, supply, and ammunition trains is that needed for bringing up from the refilling point ammunition, rations, and grain only. For all other classes of supplies transportation must, therefore, be provided by the advance section.

Service of Military Railways.

19. A service of military railways is organized when extensive military operations of a field force are dependent on a line or lines of railway for its supply in advance of the base. The construction, operation, and maintenance of these railways is the duty of the Corps of Engineers.

This service takes over from the field force all railways captured, assuming charge of their reconstruction, operation, and maintenance. It is also charged with the new construction of railway lines necessary for the supply of the field forces. It is

controlled and directed by an officer detailed as director of railways with a military controlling staff and an operating and constructing staff.

20. The director of railways is a member of the staff of the commander of the line of communications and is responsible to that commander for the successful operation, maintenance, and construction of the military railways. He receives his orders from that commander or the latter's chief of staff and takes the necessary steps to have them executed by his subordinates.

No military officer not attached to the service of military railways is allowed to give any orders to subordinates of the latter service or to interfere in any manner with the running of trains, except in the case of an impending attack. (See Service of Defense.)

21. The military controlling staff is composed of such military assistants to the director of railways as the military conditions and the railway facilities require. Their duty is to represent the director of railways in the various departments or subdivisions of the railway to which they may be assigned, to facilitate and insure the execution of the approved plans for the working of the railways, and to supply the military knowledge not possessed by the civilian officials and operatives.

If two or more lines of military railway exist, a member of the military controlling staff, called an assistant director of railways, may be assigned to each line and made responsible to the director of railways for its successful operation, maintenance, and construction. The director of railways in this case is responsible for the supervision of and cooperation between the several lines.

If any single line becomes long enough to subdivide into divisions, military conditions may require that a member of the controlling staff be assigned to one or more of these divisions. In this case he is responsible to his next military railway superior for its successful operation and maintenance.

At such important railway points as may be necessary there will be assigned railway staff officers, each of whom will be responsible to his next military railway superior for facilitating and expediting the railway operations at his station.

The work of reconstruction at the rail head will ordinarily be kept separate from the other work on the line in rear and will be done by troops, with such civilian assistance as is procurable. The officer in charge of this work will be directly under the military head of the line of railway on which he is working and is responsible for the prompt reconstruction of the line. As rapidly as practicable such reconstructed sections will be assigned to the division immediately in rear for operation and maintenance.

22. The staff of civilian assistants will consist of such railway officials, operatives, and other employees as may be available or necessary for the proper working of the military railways. As far as military conditions will permit, civilians will be used for the operation, maintenance, and construction of the military railways, officers and soldiers being used only when military conditions render it necessary. These civilians are subject to military supervision and assistance and will be responsible in their various departments and subdivisions for executing the duties assigned to them in accordance with the plans of the director of railways.

23. The relations between the civilians of the railway service will be such as exists between those of corresponding grades on an ordinary railway except as modified by the director of railways. The military staff receive their orders and instructions from their next higher military railway superiors, and are subject to them only. Each member of this staff is the military adviser of the senior civilian in charge of the department or subdivision to which he is assigned. He will ordinarily leave the actual working of the road to his civil colleague, advising him of the ends desired and the military conditions involved and will intervene in the actual working of the road only when convinced that the civilian is not taking the necessary steps to meet the requirements. The officer's decision on matters within

his own department or subdivision can be overruled only by his next military railway superior.

24. The military railway supply depots are operated and maintained under the director of railways by the railway staff. All railway supplies and materials shipped into the base will be consigned to the "director of railways."

CHANNELS OF CORRESPONDENCE.

25. It is necessary that the commander of the field forces be relieved from the consideration of details and thus be free to consider the broad lines of action to be followed by his command.

The commander of the line of communications must therefore have the confidence of his commander, who should allow him the greatest possible freedom of action with reference to communicating with the War Department on matters of routine.

All such communications will be signed "By authority of the commander of the field forces," and will in general be confined to the following subjects, viz:

(*a*) Arrangements for maintaining the supply of stores and animals.

(*b*) Matters relating to fiscal affairs or requirements.

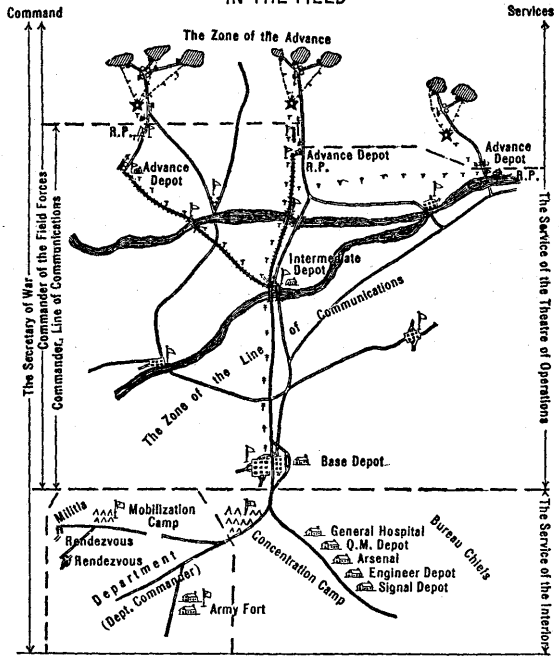
(*c*) Irregularities, defects, and deficiencies which come to his attention in the territorial or administrative zone to the rear of the base.

(*d*) Arrangements for augmenting or replacing the staff and civilian personnel of the line of communications.

(*e*) Arrangements for the evacuation of prisoners and of sick and wounded from the base.

After the system of supply has been fixed by superior authority, the commander of the line of communications and the assistant chief of staff of each advance section are authorized to communicate directly with the commanders whom they are ordered to supply on all detailed matters relating to supply, evacuation of wounded, and maintenance of lines of information. Inversely, such commanders are authorized to communicate with the assistant chief of staff of the advance section in their immediate rear or with the commander of the line of communications on the same subjects.

OUTLINE OF THE SYSTEM FOR SUPPLYING AN ARMY IN THE FIELD



ARTICLE V.

LINE OF COMMUNICATIONS.

TABLE OF PERSONNEL.

	Officers.	Veterinarians.	Post noncommissioned staff.	Master signal electricians.	Sergeants, first class.	Sergeants.	Corporals.	First-class privates.	Privates.	Cooks.	Nurses, female.	Clerks.	Artisans, laborers, or messengers.
I. HEADQUARTERS.													
Commander line of communications	1												
Chief of staff	1												
Adjutant	1											3	2
Inspector	1											1	1
Judge advocate	1											1	1
Assistant chiefs of staff			(See "Supply and Sanitary Service.")										
Director of railways			(See "Service of Military Railways.")										
Provost marshal [3]	1												
II. SERVICE OF DEFENSE AND MILITARY GOVERNMENT.													
Each district—													
District commander	1												
Adjutant	1												
Quartermaster	1												
Sanitary inspector	1												
The necessary number of troops detailed from line of communications force													
III. SUPPLY, SANITARY, AND TELEGRAPH SERVICE.													
1. Base section:													
Assistant chief of staff in charge	1											[1] 1	[1] 1
(*a*) Quartermaster base group—													
Quartermaster in charge	1												
Depot—													
Finance and accounting division	2		1									[2] 4	[2] 2
Supplies division	1		4									[2] 8	[2] 50

[1] Supplied by Quartermaster Corps.
[2] Either civilian employees or service corps detachment.
[3] The provost marshal has a command detailed from the line of communications force.

ARTICLE V—Continued.

TABLE OF PERSONNEL—Continued.

	Officers.	Veterinarians.	Post noncommissioned staff.	Master signal electricians.	Sergeants, first class.	Sergeants.	Corporals.	First-class privates.	Privates.	Cooks.	Nurses, female.	Clerks.	Artisans, laborers, or messengers.
III. SUPPLY, SANITARY, AND TELEGRAPH SERVICE—Continued.													
1. Base section—Continued.													
Assistant chief of staff in charge—Continued.													
(*a*) Quartermaster base group—Continued.													
Depot—Continued.													
Transportation and remount division	1	2	2									[1] 4	[1] 25
2 wagon companies													[1] 72
1 field bakery [2]	1		1			4							[1] 60
(*b*) Medical base group—													
Surgeon in charge	1												
Base hospital	20				8	16			129	46			
Depot personnel	1				1	1			8				
Hospital train	3				1	2			24				
Convalescent camp—Rest stations [3]													
Contagious-disease hospitals [3]													
Red Cross column [3]													
(*c*) Engineer base group—													
Engineer officer in charge	1												
Depot personnel						1	2		14				
(*d*) Ordnance base group—													
Ordnance officer in charge	1												
Depot personnel			1			1	2		8				7
(*e*) Signal base group—													
Signal officer in charge	1												
Telegraph co. (less 1 plat.)	2			2	7	12	17	29	29	2			

[1] Either civilian employees or service corps detachment.
[2] A field bakery has a baking capacity for 1 division.
[3] Personnel and composition not fixed; ordinarily organized at base section; may subsequently be transferred where required.

ARTICLE V—Continued.

TABLE OF PERSONNEL—Continued.

	Officers.	Veterinarians.	Post noncommissioned staff.	Master signal electricians.	Sergeants, first class.	Sergeants.	Corporals.	First-class privates.	Privates.	Cooks.	Nurses, female.	Clerks.	Artisans, laborers, or messengers.
III. SUPPLY, SANITARY, AND TELEGRAPH SERVICE—Continued.													
2. Intermediate section:[1]													
Assistant chief of staff in charge	1											[2] 1	[2] 1
3. Advance section:[3]													
Assistant chief of staff in charge	1											[2] 1	[2] 1
(*a*) Quartermaster advance group—													
Quartermaster in charge	1												
Finance division	1											2	1
Depot personnel		1	2									[4] 2	[4] 25
1 wagon company													[4] 36
(*b*) Medical advance group—													
Surgeon in charge	1												
Medical transport column	4					4	16		64				
Evacuation hospital	14					8	16		129				
Depot personnel	1						1		4				
(*c*) Engineer advance group—													
Engineer officer in charge	1												
Depot personnel						1	2		4				
(*d*) Ordnance advance group—													
Ordnance officer in charge	1												
Depot personnel			1			1			4				
(*e*) Signal advance group—													
Signal officer in charge	1												
1 platoon telegraph co				1	3	4	6	14	13				

[1] Organization of intermediate section follows generally that of base section.
[2] Supplied by Quartermaster Corps.
[3] Requirements for advance section to the rear of each division of the field force.
[4] Either civilian employees or service corps detachment.

ARTICLE V—Continued.

TABLE OF PERSONNEL—Continued.

	Officers.	Veterinarians.	Post noncommissioned staff.	Master signal electricians.	Sergeants, first class.	Sergeants.	Corporals.	First-class privates.	Privates.	Cooks.	Nurses, female.	Clerks.	Artisans, laborers, or messengers.
IV. SERVICE OF MILITARY RAILWAYS.													
Military controlling staff:													
Director of railways	1												
Assistant director of railways	1												
Assistant director of railways of each important route	1												
Assistant director of railways, new construction on each important route	1												
Railway staff officers at each important station	1												

GENERAL NOTES.—The headquarters of a line of communications is ordinarily established and kept at the base.

The senior line officer of troops assigned to a district of the line of communications is the district commander. He appoints his staff from the commissioned personnel of his command.

The personnel shown in the foregoing table is the minimum requirement for one division operating to the front. When the number of troops in advance of the base exceeds one division the personnel of the base section must be increased.

Intermediate and advance sections are organized at the base and sent forward as required.

All noncommissioned officers and enlisted men of staff corps casually at the base are temporarily assigned to duty with the base section.

Personnel of construction, operation, and maintenance, Service of Military Railways, are civilians; number not fixed.

INDEX.

(Numbers refer to paragraphs unless otherwise indicated. Numbers indicating pages are placed in parentheses.)

A.

Abbreviated forms for designating tactical organizations 90
fractional organizations 90
dates 92
titles 89
Abbreviations, use of, in orders 89, 90, 92
sketches ..... Appendix C
Accommodation in billets 179, 180, 188
Accountability for ammunition during active campaign 22, 218
fuel and forage 22, 204
subsistence stores 22, 213
Action, cavalry, effect of reconnoissance by independent and divisional 44, 45
of a rear guard of an advancing force 122, 159
a retreating force 121
on the capture of a work 263
Adjutant General's Department 3, 16, 18
Advance, night, precautions to be observed during a 267
preliminary reconnoissance necessary for 267
when made during a battle 266
of an army, provisions for security during the 94, 95
Advance guard and main body, distance between 100, 110, 146, 155
civilians not permitted to precede ..... (53), (71)
commander, duties of 97, 101, 106, 158, 168, (98), (212)
instructions to the 95, 98
position of 101, (208), (209)
responsibility of, for maintenance of connection 101
compliments not paid by 95
composition of 45, 95, 99, 105, 110, 111
communication between the parts of, and with main body 99, 100, 107
conversion of, to a flank guard 113
an outpost 124, 125
deserters, reception of, by ..... (71)
distance between advance party and advance cavalry 103, 110, 146
independent cavalry 44, 110
support 104, 110, 146
support and reserve 105, 110, 146
distribution of troops of 94, 102, 158

Advance guard, duties of..... 94, 95, 97, 111, 151, 198, 271
field trains to accompany, when..... 95, 99
flags of truce, bearers of, how received by..... 106, (197)
integrity of tactical units should be preserved in, etc..... 95
mounted troops to keep in touch with independent cavalry..... 103
of a cavalry command..... 96, 109
a command smaller than a brigade..... 96, 108
a wagon convoy..... 167, 168
independent cavalry..... 96, 109
an independent division..... 110
order..... 101, (207)-(209)
orders to the..... 95, 98, 100, (206), (208)
passing through defiles..... 99, 116, 149, 158
reconnoissance by..... 42, 46, 104, 106, 109
relieving the..... 124, 140
reserve..... 105, 108, 110
seldom necessary for a single regiment..... 108
strength and composition of..... 45, 95, 99, 110, 111
supplies of food gathered by, disposition of..... 198
support..... 104, 110
commander, position of..... 104
tour of duty of an, during an advance..... 124, 140
Aeronautical reconnoissance..... 56, (164), (174)
Aeroplanes, use of..... 56, 260
Aircraft, declaration prohibiting discharge of projectiles and explosives from. 313
use of, for intercommunication..... 56
Air service, work of, with cavalry..... (55)
Allowance of baggage, permanent camp and field..... 231
forage in campaign..... 204
fuel in campaign..... 204
tentage, permanent camp and field..... 181, 231
Ambulance companies..... 60, 295, 300-303
Ambulances, allowance of, for a regiment..... 145, 234, 302
loading of, on cars..... (154)
position of, on the march..... 145, 234, 302
Ammunition, accountability for..... 22, 218
receipts for..... 218
Ammunition supply carried in the ammunition train of a division..... 219
distribution and manner of carrying the, for artillery of a division..... 217, 220, 223, (142)
distribution and manner of carrying the, for cavalry of a division..... 217, 220, 221, 224
distribution and manner of carrying the, for infantry of a division..... 217, 220, 221
during combat and campaign... 219-225, 252, 260, (182), (227)
for a field army..... 225
general principles of..... 217
pistol, revolver, and rifle..... (139)
Ammunition train, cavalry division, organization of..... 224, (42)
division organization of..... 219, (42)
Ammunition trains, commanders of..... 219, 224, 235
position of, in combat..... 159, 219, 221, 223, 260, 276, (212)
marked by flags and lanterns..... 219, 223
on the march..... 145, 158, 159, 221, 223
supply trains to supplement, when..... 217, (227)

Ammunition trains, supplies carried on 34, 219, 224, 235, (227)
wagons, number of, in regiments of cavalry 25
field artillery 26
infantry 24
Animals, see also **"organization"** and **"transportation"**.
accumulation of, near the probable theater of combat 202
bell horse ..... (40)
care of 51, 141, 151, 187, 190, 239, 247, (21), (94)
cars for 243, 244, 245
crossing streams on ferries 150
draft, not to be separated from vehicles ..... (219)
to receive full forage as long as possible 204
pack, and riding, cavalry division ..... (46)
regiments, including attached sanitary troops 25
coast artillery troops 28
division, complete ..... (44)
(not attached to organizations) 30
during mobilization, how transported ..... (131)
engineers, including attached sanitary troops 27
field artillery, including attached sanitary troops 26
field bakery 31
horse artillery, including attached sanitary troops 26
infantry regiments, including attached sanitary troops 24
mountain artillery regiments, including attached sanitary troops 26
sanitary personnel, cavalry division ..... (38)
sanitary personnel, division, complete ..... (36)
signal corps, field battalion, including attached sanitary troops 32
tonnage allowance of ..... (219)
wagon company 34
extra, or spare ..... (40), (41)
cared for by regimental headquarters detachment ..... (21)
feeding of, see also **"grain"** and **"forage"** 51, 141, 187, 204, 239, 247, (217)
lead mules of combat trains, conversion of to pack 234
led horses, authorized number of ..... (40), (41)
loading and unloading of 150, (155), (157)
location of picket lines, corrals, etc., in camps 182, 186, 187, 190, 301
pack, loads for and day's travel of 237
pack train ..... (40)
separation of, from troops during rail or water transportation 203, 242, 244
shelter and shade for ..... (123)
stock cars and trains for 203, 242–247
watering of 51, 141, 151, 187, 190, 239, 247, (21)
troughs for ..... (123)
Armament, organization, and discipline of organized militia ..... (11)
Armistices and capitulations ..... (197)–(198)
Armored trains 175, (226)
Army composition of 11
field, see **"Field Army."**
regular, composition of 2, 3
Arrangements for camps or bivouacs 153, 187, 189, (223), (224)
for watering in camp 151, 159

Artillery, see also under "**organization**".
action of, in combat, see also under "**combat**".
against counter attack ... 265
in the attack ... 260, 261, 262, 284
in the defense ... 276, 280, 281, 284
pursuit ... 264
with rear guard ... 121
ammunition supply and distribution ... 217, 219, 220, 223, 225, (142), (227)
trains, in battle ... 159, 219, 223, 260, 276
on the march ... 145, 159, 223
animals, care of, etc., see under "**animals.**"
bivouacs ... 189
caissons, load for ... 219
camp for a battalion ... (120)
carriages, rail transportation for ... 244, 246
cooperation between, and infantry ... 260, 261, 281
corps, coast, duties of personnel of ... 28
field transportation ... 28, (40)
crossing streams on ferries ... 150
duties of with regard to reporting information obtained ... 39, 40, 41, 53, 62
entraining and detraining ... 246, 248
escorts and guards for ... 161, 260, (102)
fire during the attack ... 254, 260–265, 271
defense ... 274, 276, 277, 280, 281
observation and control of by aeroplanes ... 56
protection against, see also "**intrenchments**" ... (175)
fords for, depth of ... 149
halts on the march, see also under "**halts**" ... 148
heavy, field, a part of an auxiliary division ... 10, 159
coast artillery to man ... 28
position of, on the march ... 159
horse equipment and harness in camps, etc ... (123)
horse, to be attached to independent cavalry ... 7, (49), (74)
position with independent cavalry ... (49)
ice, thickness necessary to support ... 149
objective in combat ... 261, 281, (163)
organization, see under "**organization.**"
position of commander of, on the march ... (102)
in the defense ... 283, (174)
on the march ... 44, 105, 110, 145, 158, 159, 161
ranges of fire ... 255, 259
shrapnel, ground covered by ... 255
siege and engineer park may be attached to auxiliary division ... 10
heavy field, instruction in managment of ... 28
spaces, camp, and road ... (214)
supports and guards for ... 161, 260, (102)
to occupy captured positions ... 263, 264
with advance guards ... 95, 99, 105, 110
flank guards ... 95, 112
outposts ... 95, 135, (78), (85)
rear guards ... 95, 118, 121, 159, (74)
Assault, see "**combat.**"
Attack, see "**combat.**"
Auto wagons or trucks, capacity and use of ... (129), (225)

B.

Badges, distinguishing, in night operations 267
Baggage, allowance of, permanent camp and field 231
checkable, in rail transportation ..... (154)
Bakery, field, assignment, establishment, and control of 31, 212
Bakeries, flour mills, etc., use of in theater of operations 212, (127)
improvisation of 216
Balloon reconnoissance 56, (164), (174)
train, position of on march 159
Balloons, declaration prohibiting the discharge of projectiles and explosives from 313
Bands, see under "**organization.**"
on the march ..... (99)
use of, in combat 303
Banks of streams, method of describing in orders, messages, etc 76
Base hospitals, see under "**hospitals.**"
of operations, for supply of an army in the field .. 12, 199, (128), Appendix H
Battalion, see "**commanders in the field**" and "**organization.**"
supply sergeants, duties of during combat ..... (140)
Battery, see also under "**organization.**" ..... (23), (25), (26)
Battle, see "**combat.**"
Bearings, compass, in orders, messages, etc., and night operations 57, 76, 267
Beaton zone of shrapnel 255
Belligerents, internment of ..... (200)
qualifications of ..... (194)
Billeting, see also under "**shelter**" 178, 179, 180, 183, 184, 188, 198
Bivouac, see also under "**shelter**" 125, 141, 153, 180, 184, 187, 189, 190, 191
Blanks, field messages ..... (203)
Bombardments and sieges ..... 124, 125, 139, 180, 192, 262, (196)-(197)
Bread, fresh, issue of, in the field 212
Bridge equipage, allotment of ..... (30)
train, light, may be attached to cavalry division 7
position of, on the march 105, 159
Bridges, crossing of 149
destruction of, by rear guard ..... (76)
Brigade, cavalry 7
flags and pennants ..... Appendix A
how created 5
how designated 9
independent 7, 8
separate 4, 14
staff 5, 8, 16
tactical unit only, as a rule 4
temporary 5
transportation 30, (41), (44), (46)
Bugle calls and signals 146, (77), (96)
Bureau of Information (or Inquiry Office) for Prisoners of War. 23, (195), (196)
Buzzers, cavalry 50, 61

C.

Cables, submarine, destruction of ..... (199)
Calls, bugle or trumpet 146, (77), (96)
Caisson, artillery, load for 219
Camera, use of, by patrols 50
Camp followers under provost marshal 15, 21
Camps, see under "**shelter.**"

Camping places, see under "**shelter.**"
Cantonment, see under "**shelter**".
Capacity of cars, ships, and army wagons ..... (217)–(220)
Capitulation and armistices ..... (197)–(198)
Care of animals 51, 141, 151, 187, 190, 239, 247, (21), (94)
troops, see also "**marching,**" "**messing,**" "**sanitary service,**" and "**shelter**" 151, 190, 214–216, 288, 302–304
Cars, baggage, box, flat, kitchen, sleeping, stock, and preparation of, for transportation of troops, animals, and baggage by rail 206, 238–248
Carts of combat trains, artillery, and signal troops ..... (41)
Cavalry, see also under "**organization.**"
action of, in combat, see under "**combat.**"
against counter attack 265
dismounted 141, 254, 260, 269, 283
in the attack 260, 261, 264, 284
defense 282, 284, (174)
pursuit 264
preliminary to general combat 253
with rear guard 121, 122
advance, definition, and duties of 42, 45, 102, 103, 110, 125, 130, 168, 172
air service with the 56
ammunition supply and distribution .. 217, 219, 220, 221, 222, 224, 225, (227)
ammunition trains in battle 159, 219, 221, 260, 276
animals, care of, etc., see under "**animals.**"
buzzers 50, 61
camp of, squadron of ..... (119)
cars for, rail transportation 244
command, advance guard of 109
crossing streams on ferries 150
divisional, reconnoissance by 42, 45
duties of, with regard to reporting information obtained .. 39, 40, 41, 53, 62
fire 141, 255, 269
fords for, depth of 149
halts on march, see also under "**halts**" 148
ice, thickness of, to support 149
independent, bivouacs of 141
communication between and supreme commander .. 44
cooperation of, with advance cavalry 103, 110, 130
definition and duties of .. 43, 44, 94, 96, 100, 158, 198, 253, 268–272
extent of front covered by brigade of ..... (49)
food supplies gathered by 198
horse artillery with 7, (49), (74)
outposts 141
transmission of information from 44, 94, 270
use of, with rear guards exceptional ..... (74)
intrenchments, see "**marches.**"
march formations, see "**marches.**"
methods of fighting 269
organization, see under "**organization.**"
outposts 45, 141
patrolling by, see under "**patrols.**"
position of, in the defense 276
on the march 110, 145, 158, 161
rate and length of marches 147, 160
rear cavalry, definition and duties of 118, 121, 122
reconnoissance, see under "**reconnoissance.**"

Cavalry screen 43, 44, 94, 103, 130, 158, 268
spaces, camp and road ..... (214)–(216)
versus cavalry 268–272
with advance guards 45, 95, 96, 99, 103, 104, 110, 166, 168
with flank guards 45, 95, 96, 112
with outposts 45, 95, 96, 125, 128, 130, 135, 141
with rear guards 45, 95, 96, 116, 118, 121, 122, 159, 170
Challenging by sentries and outguard commanders ..... (84)
Chaplains 3, 28, 286
Checking, or testing orders 93
Chief engineer, function and duties of 19
of staff and assistants, function and duties of ..... 17, Appendix H
signal officer, function and duties of 20
Cipher messages 65
Coast artillery corps, duties and organization of 28
field transportation 28, (41)
Columns, length of, data for ascertaining 52, (214), (215)
Combat ..... 55, 121, 126, 141, 158, 159, 172, 173, 207, 217–225, 250–284, 302, 303, and appendices D and G
defensive, advantages of 252
ammunition 222, 252, (227)
conduct of, at night 283
counter attacks 274, 281
decisive action 281
machine guns, fire of 281
reserves, local 281
defense of a convoy 172
final stage 282
action in case of repulse of attackers. 282
action in case retreat is necessary .. 282
offensive returns 274, 281, 282
preparatory stage 253, 280
action of artillery 280
reserves 276, 281, 282
disadvantages of the 251
food supplies, etc 252
front, extent of 278
obstacles 277, 283
orders for 275, (211)
outpost reserve, action of 135
plan of 275, 276
ranges to be measured and marked 277
reconnaissance and selection of position 273
requisites of position 274
reserves 276
retreat, lines of 274, 276
troops, distribution of 276
artillery 276
cavalry 276
engineers 276
infantry 276
sanitary troops 276
signal troops 276
trains 276
water 252

Combat defensive, when adopted 250
defensive and offensive, a "position in readiness" 284
ambulance companies 302, 303
company trains 302
"attacking position" ..... (165)
dressing stations 303
field fortifications and intrenchments, see "**trenches.**"
field hospitals 302, 303
fire 141, 251, 252, 254, 260–265, 280, 281
first-aid stations 303
intrenchments, see "**trenches.**"
issue of rations, haversack, to individuals, preceding 207
operations and reconnoissances preceding 55, 207, 253, 273, 302
ranges, classification of 255, 260
to be measured 252, 277, (79)
shrapnel, ground covered by 255
stations for slightly wounded 303
wounded, care of 303
offensive, advantages of the 251
attack, enveloping and flank, effects of small arms on 251
frontal, difficulties of 251
of convoy 173
orders for 259, 271, (211)
plan of 258
cavalry versus cavalry 268–272
"attacking position" 271
charge 239, 271, 272
combat patrols 271
ground scouts 271
plan of attack 271
combat trains, see also under "**trains**" ... 159, 220, 222, 234, 260
conduct of, action in case of repulse 265
aerial reconnoissance 56, 260
ammunition, supply and distribution of 217, 218, 219, 221–225, 252, 260, 293, (227)
ammunition trains .. 159, 219, 221, 223, 224, 260, (227)
artillery, action of 260–265
escorts and guards for 158, 260
officers or scouts to accompany commanders of attacking lines ... (163)
preparation for infantry attack .. 260, 262
cavalry, action of 260, 261, 264, 265, 268–272
decisive action 261
advance by rushes ..... (165), (166)
artillery 261
cavalry 261
infantry assault 261
infantry "attacking position" 261, 267
infantry main attack 261
infantry "rendezvous position" 261, 267
engineers, action of 260, 267, (211)

Combat, offensive, conduct of field and supply trains..... 159, 260, 302, (212), (227)
final stage..... 263
infantry, action of..... 260–265
as escorts and guards for artillery. 158, 260
pack trains..... 260, (212)
preparatory stage..... 253, 260, 262
rations, supply and distribution of... 260, 293, (227)
rear guard..... 159
reenforcements..... 260
reserves..... 260, 261, 271
signal troops, action of..... 260, (211)
the pursuit..... 264
disadvantages of the..... 252
night attacks, when undertaken..... 266
how conducted..... 267
position of rendezvous..... (164), (170)
stages of the..... 258
Combat trains, see also under **"trains"**..... 157, 159, 203, 214, 217, 219–224, 232, 234, 276, 293, (33), (40), (41), (102), (139), (142), (143), (214)
Command, succession to..... 13
Commandants of places of internment for prisoners of war..... 23, (195), (196)
Commanders in the field, see also under **"organization."**
advance cavalry, duties of by day and at night..... 130
in general..... 45, 102, 103, 110
with convoys..... 168, 172
reconnoissance by..... 42
to report information obtained. 39, 40, 41, 53, 62, (86)
with outposts..... 125, 130
advance guard, advance cavalry to send information to..... 103
duties of, defined..... 97
with convoys..... 168
orders and instructions issued by... 101, (207), (209)
place of or where messages may be sent..... 101, (207), (209)
reconnoissance by..... 42, 101, 106, 168
the advance, how conducted by..... 101
to report information obtained..... 39, 40, 41, 53, 62
ambulance company, duties of, in combat..... 303
guards for field hospitals..... 295
position of, on the march..... 151, 302
tactical units to which attached..... 300
title of..... 290
to keep war diary..... 60
to report information obtained. 39, 40, 41, 53, 62
ammunition train..... 219, 235, (227)
duties of, to communicate with division and artillery commanders..... 219
to distribute loads in wagons and caissons..... 219, 221, 223
to keep war diary..... 60
to mark day and night positions of trains..... 219
to replenish ammunition wagons.. 222, 224, 260

Commanders in the field—Continued.
ammunition train, duties of, to replenish combat trains..... 217, 222
to report information obtained... 39, 40, 41, 53, 62
to station trains during combat.. 159, 219, 221, 223, 260, 276, (212)
army, field, see also under "**commanders in the field in general**"..... 10, 12, 15, 60, 225
army, invading, may levy contribution and supplies..... 198
army, see also under "**commanders in the field in general**"... 11, 38, 60
to command two or more field armies..... 11
keep war diary..... 60
organize information division..... 17, 38
artillery, see "**artillery.**"
battalion, see also under "**organization**"..... 4
of engineers and signal troops, assignment to staff duty..... 16
responsible for combat trains..... 220, 234, (41)
to keep war diary..... 60
to report information obtained..... 39, 40, 41, 53, 62
brigade, see also under "**commanders in the field in general**". 4, 5
may establish rendezvous station for empty battalion ammunition wagons..... 219
to appoint provost marshal and furnish provost guard, when..... 152
to keep war diary..... 60
to provide guards for headquarters camps and trains. 15
to report information obtained..... 39, 40, 41, 53, 62
combat trains, see also "**trains, combat**"..... 234
company, see also under "**organization**"..... 4
duties in care of troops..... 151, 190, 214–216, 288, 302–304
place on the march..... 151
to keep war diary..... 60
to supervise messing..... 214, 215, 216
convoy..... 166
detachment..... 91
to keep war diary, when..... 60, 91
to report information obtained..... 39, 40, 41, 53, 62, (86)
division, see also under "**commanders in the field in general**" 5, 6
to appoint provost marshal and furnish provost guard..... 15, 152
to keep war diary..... 17, 60
to provide guards for headquarters camps and trains. 15
to report information obtained..... 39, 40, 41, 53, 62
field army..... 10, 12, 15, 60, 225
field hospital, see under "**sanitary service.**"
field train, company, battalion, regimental, etc..... 60, 145, 230
independent cavalry, see also under "**cavalry**"..... 43, 44, 94, 96, 103, 109, 110, 130, 158, 198, 253, 268–272
line of communications..... 12, 198, 199, 306, Appendix H
outpost, see "**outpost.**"
provost guards..... 15, 21, 23, 152, 159, 187
rear guard, see also "**rear guard**"..... 95, 98, 115, 117, 121, 122, 159
regimental, see also "**artillery,**" "**cavalry,**" and "**infantry,**" and under "**commanders in the field in general.**"

Commanders in the field—Continued.
regimental, cooking utensils, may order carried on combat trains or otherwise ... 214
equipment of men, may order part of carried on field or combat wagons ... 232
first aid packets, responsibility connected therewith ... 296
identification tags, responsibility connected therewith ... 297
may assign band to duty in sanitary service ... 303
messing arrangements by ... 214, 215
rations carried by men, decides when to be used . 214
rations, issue of additional haversack before combat, etc ... 207
to keep war diary ... 60
to report information obtained ... 39, 40, 41, 53, 62
sanitary units, see also under "**sanitary service**" ... 291
squadron, see also "**cavalry,**" and under "**organization.**"
divisional cavalry, as provost marshal ... 15
responsible for combat trains ... 220, 234
to keep war diary ... 60
to report information obtained ... 39, 40, 41, 53, 62
subordinate, duties of preliminary to marches ... 144
framing of orders by ... 82
is allowed freedom of action in combat ... 260
orders should not trespass on province of ... 79
to be prepared to construct and man intrenchments ... 256
to report information obtained ... 39, 40, 41, 53, 62
supreme, alone orders demolition of important structures ... 19, 121
reconnoissance in force ... 55
controls line of communications ... 12, (225)
controls selection of camping ground ... 126, 187
duties of, in combat, see also "**combat**" 258, 267, 270, 273, 275
newspaper correspondents given information only by orders of ... 41
orders annoyance and deception of enemy ... 40, 124
plans of, how communicated ... 70
signal troops generally controlled by ... 20, 99, 110, 125
to whom connected by lines of information ... 44, 125, 260
Commanders in the field (in general).
coordinate the transportation of military supplies. 195
chief of staff for, and duties ... 16, 17
duties of, in combat, see "**combat.**"
duties of, relating to courts-martial, supply service, etc ... 14
equipment of troops, responsibility for ... 203
first-aid packets, responsibility of, for providing .. 296
guards, details of, for sanitary formations ... 295
and escorts, for artillery, responsibility for providing ... 161, 260, (102)
and escorts, for trains, responsibility for providing ... 228
headquarters of ... 15
guards for ... 15
identification tags, responsibility for providing ... 297

Commanders in the field (**in general**)—Continued.
information division, certain will establish..... 17, 38
marches, duties of, preliminary to..... 143
messages, unsealed, may be read by..... 64
messing, control and supervision by, see also "**messing**"..... 135, 141, 214–216, 247
orderlies for, at headquarters of brigades, divisions, and field armies..... 15
orders, field, see under "**orders.**"
orders issued by, characteristics and classifications of..... 68–71
orders issued by, should assume entire responsibility in..... 78
overloading wagons or pack animals, to prevent.. 228
patrolling, responsibility for..... 48
place of, or where messages may be sent..... 87
quartermasters, details of, for sanitary service.... 294
reconnoissance in force, by whom ordered..... 55
retreat, arrangements for and to whom communicated..... 83, 115, 116
sanitary advisers of..... 288
inspections, duties of, concerning..... 292
inspectors to report to..... 292
security, responsibility for..... 17, 48, 95
at a halt and in camp.. 17, 48, 95, 124, 153, 187, (207)
in an advance..... 17, 48, 95, 98, 112, 122, 158, (207)
responsibility for in a retreat..... 17, 48, 95, 111, 112, 115, 158, (207)
staffs and assistants for..... 16, Appendix H
supreme, supra.
tactical employment of the several arms..... 257
to direct disposal of dead..... 305
to inform senior surgeons of contemplated military movements..... 303
supply officers of plans..... 194
to organize search for wounded..... 304
to report information obtained..... 39, 40, 41, 53, 62
transportation by rail, contract for, to be furnished to..... 239
transportation by rail, detraining and unloading, to order details of..... 248
transportation by rail, loading and entraining, to order details of..... 246, 247
by water..... 203, 249
pertaining to sanitary service..... 293
unauthorized vehicles and baggage, to order inspections of trains for..... 228
war diary, required to keep..... 60
Commands, battle, fire, and mine, tactical units of coast artillery..... (31)
Communication between adjoining outguards, and between outguards and supports..... 132
between sentinels, and between sentinels and patrols..... 133
of orders..... 72

Communication, lines of, advance guard 107
between artillery commanders and infantry attacking lines 260
independent cavalry and supreme commander 44
division commanders and their subordinates ..... (164)
War Department and commander of line of communications ..... (229)
during combat ..... (164), (211)
flank guards 112
information, signal service, general 20
line of communications 20, (225), (227)
outpost 125, 126, 128, 131, 132, 135, 136, (120)
outpost, cavalry 141, (120)
patrols, cavalry buzzers may be provided 50
rear guard 116, 120, 121
signal troops detailed when required on service of security 95
with captive balloons 56
Communications, interior, camp sites ..... (117)
line of, see also **"line of communications"** 12
rear and lateral, combat 260, 274
outpost 126
sheltered, between supports and firing line 277
Company, see also under **"organization"** 4
both an administrative and a tactical unit (applies also to a battery of artillery and a troop of cavalry) 4
officers, position on the march 151
wagons, see also under **"trains"** 230
Compass bearings, in field orders and messages 57, 76
in night attacks 267
carried by patrol leaders 50
Compliments, on the march 142
on the service of security 95
Composition and strength, see **"strength and composition."**
Concealment, importance of, in patrolling 47, 51, 133, 138
protecting from artillery fire ..... (175)
construction of trenches, see also **"trenches"** 277, (220), (221)
the defensive 274, 277, 280
offensive 251, 258, 260, 261, 267
on outpost 126, 132, 133, 135, 138
Concentration camps ..... (223), (230)
line of communications, personnel for ..... (223), 224
location of ..... (223)
rations and forage for troops enroute to ..... (223)
selection of sites for ..... (223), (224)
troops at, under command of whom ..... (223)
Confidential messages 20, 64
Connecting posts, location and use of 67
Contact mines, submarine ..... (201)-(202)
Contour intervals and map scales 59
Contract for rail transportation 239, 241
Contributions, levying of 198
Convalescents and noneffectives as guards for field trains 233

Conventional signs and abbreviations in sketches ..... **Appendix C**
Convoys 162–176, (189), (190)
by rail 175
distance between pioneer train and train to be guarded 175
personnel of pioneer train 175
preceded by pioneer train when 175
protection of locomotive and cars 175
tools and supplies carried on pioneer train 175
by water, and regulations for cooperation of army and navy 176
definition 162
escorts for 162, 166, 174–176
field train of escort of wagon 165
of evacuation ..... (189), (190)
may be broken up by belligerents when ..... (189)
obligation of belligerent to return medical and military personnel ..... (189)
obligation of belligerent to return medical material .. (189)
requisitioned material and personnel with, rules regarding ..... (190)
sick and wounded to be cared for by belligerent when ..... (189)
vehicles, military, kinds of, subject to capture ..... (189)
of prisoners 174
disposition of prisoners at night 174
in case of attack 174
escorts to 174
formation of captives into companies 174
guards for 174
wagon, see under "**trains.**"
Cooking, instruction in 156, 215
trenches for 216
utensils, when carried on combat trains 214
Cooks as guards for field trains 233
duties of, during combat ..... (140)
Cooperation between artillery and infantry in the attack 260, 261
defense 281
independent and advance cavalry 103, 110, 130
of all arms, necessity for 45, 95, 257, 265
secured by lines of information ..... (164)
Copies of orders and reports to be kept 60
distribution of 72, 74, 88
Corps of engineers, see under "**organization.**"
Correspondence, line of communications ..... (229)
Correspondents, newspaper 41
Cots, or bunks, to be provided in permanent camps 190
Counter attack 274
by the enemy 265
decisive, artillery support in the 281
cavalry action during the 282
direction of the 281
how carried out 281, 282
local, use of, in the defense 274, 281, 282
Countersign, use of 50, 124
Cover for supports and reserves, see also "**trenches**" 126, 131, 261, 276
Covered communications, importance of, in the defense 274, (172), (220), (221)
Covering detachments, see "**advance,**" "**flank,**" and "**rear guards,**" "**outposts,**" "**patrols,**" and "**reconnoitering detachments.**"

Crossing bridges, fords, and other obstacles 149
streams on ferries 150
Cyclists as messengers 61, (203)

D.

Daily duties in standing camps 190
Darkness, use of, to prepare for renewal of attack 261
Dead, collection and disposal of 305
Decision of commander, basis of orders 75
Decisive counter attack 274, 281, 282
Defense, see "combat."
line of communications, service of ..... (227)–(229)
Defiles, passing through 99, 116, 149, 158, 168
Definitions:
"a position in readiness" 284
advance cavalry 103
advance guard 94
ammunition trains 235
army 11
army, field 10
army, of the United States 2
"attacking line" ..... (165)
"attacking position" ..... (165)
"auxiliary division" 10
base of operations 199, (128)
battery, combat train ..... footnote (41)
"battalion field train" ..... 230, footnote (41)
billeting 180
bivouac 180
brigade, cavalry, normal 4, 7
brigade, normal 4, 5
brigade, separate 4
camp 180
cantonment 180
cavalry, advance 103, 125
cavalry brigade, normal 4, 7
cavalry division 4, 7
cavalry, divisional 45
cavalry, independent 44
cavalry, rear ..... (75)
combat trains 234, (40), (41)
commander of trains ..... (42)
concentration camp ..... (223), (230)
contributions ..... (127)
convoy 162
counter-attack ..... footnote (172)
covering detachments 94
"decisive action," or "main attack" 258, 268
"decisive counter-attack" or "assumption of the offensive" footnote .. (172)
detachment 91
diary, war 60
displacement tonnage ..... (221)
division, cavalry 4, 7
division, normal 4, 6
divisional cavalry 45
field army 10
field orders 69

Definitions—Continued.
field train 230, (41)
fighting line 276
"final stage" of the attack 258, 268
flank guard 94
foraging 198
freight tonnage ..... (218)
gross tonnage ..... (218)
head of column 76
headquarters of a command 15
independent cavalry 44
infirmaries 301
"information officers" 63
"leading troops" (description of) 111
left flank 76
line of communications 12, 199
lines of communication (or lines of information) (not defined see ..... 20, 32, 44, 107, 112, etc.
message 57
military crest ..... footnote (175)
military order 68
militia, organized ..... footnote (11)
mobilization camp ..... (223), (230)
net register tonnage ..... (218)
"observation groups" 131
"offensive returns" ..... footnote (172)
orders, field 69
orders, routine 69
ordinary, rapid, and urgent speed for messages 64
organized land forces of the United States 1
organized militia ..... footnote (11)
outguards 131
outposts 94
patrol ..... footnote (50)
point of an advance guard 104
position in readiness 284
"position of rendezvous" or "rendezvous position" 261
"preparatory stage" of the attack 258, 268
ranges, rifle, field artillery, heavy artillery 255, (162), (163)
rear cavalry ..... (75)
rear guard 94
rear party 118
rear point 118
reconnoissance 42
reconnoissance in force 55
"regimental field train" ..... footnote (41), 230
register ton ..... (218)
regular army 3
report 58
requisitions 198
right flank 76
routine orders 69
sanitary troops 33
separate brigade 4
service of security 94
ship's ton ..... (218)

Definitions—Continued.
spy ..... (197)
successful march 142
supply trains 236, (42)
tail of column 76
tonnage, gross, register, displacement and freight ..... (218)
trains, ammunition 235
trains, combat 234, (40), (41)
wagon company 34
war diary 60
Demolitions of important structures 19, 121, 227
rear guard in action 121
Department commander, functions of in time of war ..... (223)
Depots, supply, see also under "**service of supply**" ..... 12, 199, 200, 202, 204, 208, 217, 223, 226, 306, Appendix H
Depth of fords, for various arms, practicable 149
Deserters, information from 37, 38
reception of, by advance guards ..... (71)
examining posts 139
outposts 133, 139
Destruction of bridges, railways, etc., by rear guard 121
Detached posts 125, 128, 134
Detachment, defined 91
Detachments, organized, for special purposes 8
Detraining and unloading 248
Diagnosis tags 303
Diaries, war 17, 60, 213
Dirigible balloons 56, 313
Dimensions of camps 187, (216)
Discipline, fire 254
march 142
organization, and armament of organized militia ..... footnote (11)
Discovery of enemy to be promptly reported 53, (86)
Discussion of military situation, plans, etc., with civilians prohibited 40
Disembarkations 249, (224)
Displacement tonnage, definition of ..... (218)
Distance between advance cavalry and point of advance party 103, 110, 146
train of convoys 168
guard and main body 100, 110, 146
support and reserve 105, 110, 146
party and support 104, 110, 146
elements of columns on march 146, 155
fractions of rear guard 119, 146
independent cavalry and advance guard 44, 110
outguards and sentinels 132
outpost and main body 126, 135, 141
line of resistance and reserve 135, 141
rear guard and train of convoy 170
reserve and main body 119, 146, 159
sections of convoys 165
units in passing obstacles 149
Distance of fractions of command from initial point of march 144
Distant ranges 255
Distribution of ammunition, see under "**ammunition supply.**"
copies of orders 72, 74, 88
troops 84, 86, 128, 145, 158, 161, 276

Division, see also under "**organization.**"
both an administrative and a tactical unit 4
flags and pennants ..... Appendix A
how created 5
designated 9
independent, additional troops for 8
advance guard of an 110
staff for 16
sanitary troops for duty with, how distributed ..... (35), (37)
staff 16
temporary 4
transportation 30, 33, 34, (227)
Divisional cavalry, see also "**cavalry**" 15, 42, 45
Double sentinels 133
Draft animals, see under "**animals.**"
Drains, in camp 187
Dressing stations, establishment of 276, 303, (164)
Drinking water, in camp and on the march, see also "**water**" 151, 182, 187, 190, 288, (98)
Duties, see "**commanders in the field.**"
daily, in camp ..... (123)

E.

Effect of fire, rifle and artillery 254, 257
Effective ranges 255, (162), (163)
Efficacy of fire 254
Embarkations 249, (224)
Emergency ration 205, 206
Enemy, see "**marches**," "**combat**," etc.
assumption as to actions of 38
indications of 52
restrictions as to means of injuring ..... (196)–(197)
Engineer, chief, of an army, duties of 19
park 10, 227
Engineers, see also under "**organization.**"
action of in combat, see under "**combat.**"
the attack 260, 261, 267
defense 276
battalion commanders of may be division engineers 16
battalions of, officers and men of, line troops 27
camp for a battalion of ..... (120), (216)
cars for rail transportation 240
duties of with regard to reporting information obtained 39, 40, 41, 53, 62, (86)
in night attacks 267
the service of security 95, 99, 104, 105, 110, 111, 116, 118, 121, 125, 159
intrenchments, see also "**trenches**" 19, 125, 256, 276
officers of, care and disposal of property by 19
pioneer companies, strength of when attached to cavalry division ..... (29)
position of on the march 105, 110, 145, 158
spaces, camp and road ..... (214)–(216)
with advance guards 99, 104, 105, 110, 111, 166
line of communications ..... (227)–(229), (232), (233), (234)
outposts 125
rear guards 116, 118, 121, 159
Entraining and loading 246

Entrenchments, see "**trenches.**"
Envelopes, for field messages 64
Equipment and preparation of railroad cars ..... 245, (227)–(229)
of combat trains 220, 234
men when carried on field or combat wagons 232
patrol leaders 50
personal, and arms, of soldiers falling out on a march 302
troops traveling by rail 246
precautions taken to prevent glitter and rattle of 48
Escorts and guards for artillery 161, 260, (102)
trains 159, 162, 228, 233
for convoys 162, 166, 174–176
"Estimate of the situation" 75
Estimating strength of passing troops 52
Evacuation hospitals 12, 226, 306, (39) (227), (233)
Examining posts 139
Explosives and demolition materials 227, 313, (55)

F.

Field army 10
ammunition supply for 225
"auxiliary division" of 10
auxiliary troops of 10
flags and pennants for ..... Appendix A
how created 11
designated 10
line of communications for ..... 12, Appendix H
staff 16
artillery, see "**artillery.**"
bakeries 31, 212
glasses, carried by patrol leaders 50
hospitals 33, 60, 181, 182, 260, 276, 300–303, (227)
camps for 186, 301
guards for 295, (188)
positions during combat 276
on the march 302
message, see "**message, field**" 57
form for ..... Appendix B
methods of subsisting 207–213
of fire, importance of in the defense 274
orders, see "**orders.**"
trains and wagons, see under "**trains.**"
Fighting line 276, 278
Fire, in combat, see also "**combat**" 251, 252, 254, 260–265, 271, 272, 274, 276, 277, 280, 281
Fires, cooking, how prepared 216
on outpost, rules for 131, 132
Firing line, advance of 261
in the defense 276
First aid packets 296
stations, establishment of 276, 303
Flags and pennants ..... 9, Appendix A
of truce 106, 133, (84), (196), (197)
red cross 286, (190)
to mark position of ammunition trains 219, 223
sanitary formations or establishments 286
headquarters, supply depots, and trains .. Appendix A

Flank guards..... 45, 94, 95, 106, 112–114, 146
marches..... 113
Flying machine, reconnoissance by..... 56, 313
Followers, camp..... 21, 322
Forage, see also "**grain.**"
accountability for, in active campaign..... 22, 204
and rations during concentration..... (223)
and subsistence, table of..... (217), (218)
depots of grain and compressed hay..... 204
division supply trains to obtain, in theater of operations. 196, 204, (42), (227)
draft animals to receive full, as long as possible..... 204
during mobilization, how transported..... 203
ration..... 204, (217)
how supplemented when reduced..... 204
resources of the country in, must be utilized in campaign. 196, 198, 204, (42)
Forced marches, see also "**marches**"..... 160
Fords, additional should be sought for long columns..... 149
depth of, for cavalry, infantry, and artillery and wagons..... 149
limits of, when marked..... 149
obstruction of, by rear guards..... 121
rules for foot troops crossing, in strong current..... 149
Formation for patrols..... 51
on the march, see also "**marches**"..... 145
Form, field message blank..... (203)
Forms, for field orders, see also "**orders**"..... (206)–(213)
infantry trenches..... (220), (221)
Free postage, inquiry offices (information bureaus) enjoy the privilege of.. (196)
Freight cars, capacity of..... (217), (218)
Front and flanks of main body, in presence of enemy, to be covered by outposts..... 126
covered by battalion on outpost..... 127
brigade of independent cavalry..... (49)
extent of, for intrenched troops..... 278
Fuel, accountability for, during active campaign..... 22, 204
how generally drawn in campaign..... 204
for cooking purposes, quantity necessary..... 204

G.

General officers, see under "**organization.**"
orders, see "**orders.**"
rules or principles, see "**rules, general, or principles.**"
staff corps..... 16, 29
Geneva convention, see "**red cross convention.**"
Glasses, field, carried by patrol leaders..... 50
Grain, see also "**forage.**"
accountability for, in active campaign..... 22, 204
additional wagons for, in division ammunition train..... 235
depots of, and compressed hay..... 204
division supply trains to obtain, in theater of operations..... 196, 204, (42)
for pack animals, cavalry regiment..... 25
infantry..... 24
for wagon company trains..... (40)
on company wagons..... 231
only, usually carried on the march..... 204
ration..... 204, (217)
reserve of, how carried in cavalry and artillery..... 204
supply of, on supply trains..... 236

Grazing, as supplement to forage supply 171, 204
Gross tonnage, definition of ..... (218)
Ground, influence of, on the defense 274
Guard and other routine duty in standing camps 190
Guards, see also "**advance guard**," "**flank guard**," and "**rear guard**."
and escorts for artillery 161, 260, (102)
trains 159, 162, 228, 233
armed escorts, for convoys 162, 166, 174-176
for field hospitals 295, (188)
headquarters, camps, and trains 15, 152, 187
prisoners under convoy 174
sanitary service 287, 295, (188)
interior, for camp 187, 190
on troops trains 247, 248
over water supply 187, 190
police, in wagon convoys 164
provost, composition and duties 15, 21, 152, 159, 187
position on the march 152
special, for ammunition, supply, and pack trains 159
Guides, use of by patrols 50
in night marches 161
Guns, machine, see "**machine guns**."

H.

Halt order 124, 153, 187, (209)
Halts, see also "**marches**."
crossing streams and obstacles 149
for water 148, 151
in forced marches 160
long, desirable features of places for 148
use of band during ..... (99)
on the march, for artillery, cavalry, and infantry 148
protection during 17, 48, 95, 124, 153, 187
rules for, when one column overtakes another, etc 157
troops to be informed of length of 142
use of watches for effecting simultaneous, in long columns 148
Haversack ration 205
Head and tail of column defined 76
Headquarters, defined 15
field and combat trains for ..... (40)
guard for, see under "**guards**."
line of communications ..... (234)
mess outfits, how transported 230, 231
orderlies for, of brigades, divisions, and field armies 15
organizations which have 15
Heavy field artillery, coast artillery corps to man 28
Horse artillery, see under "**artillery**."
Horses, as mounts, for draft purposes, etc., see under "**animals**."
Hospital trains ..... (232)
Hospitals, base 12, 199, 306 (39), (232)
contagious disease 306, (232)
evacuation 12, 226, 306 (39), (227), (233)
field 33, 60, 181, 182, 260, 276, 300-303, (227)
how marked at night 286
local 182
Hostilities, laws of war governing 308-314

I.

Ice, thickness of, for crossing of various arms, etc., on..... 149
Incinerators for disposal of camp refuse, etc., use and description of..... 190, 216
Identification tags, every member of command to be provided with..... 297
Impressment of labor and means of transportation in a hostile country..... 198
Independent cavalry, see under "**cavalry.**"
Indications of the enemy..... 52
Infantry, see "**organization.**"
action of, in combat, see "**combat.**"
against counter attack..... 265
in the attack..... 254, 260, 261, 262, 267, 284
in the defense..... 276, 277, 280, 281, 282, 283, 284
in the pursuit..... 264
with rear guard..... 121, 159
ammunition supply and distribution..... 217, 219, 221, 222, 225, (227)
trains in battle..... 159, 219, 221, 276 (164)
as escorts and guards for artillery..... 161, 260 (102)
battalion of, and troop of cavalry, as escort for train of 100 wagons..... 164, 166
bivouacs, see under "**shelter.**"
camp for regiment of..... (121)
cars for, rail transportation..... 244
cooperation between, and artillery..... 260, 261, 281
crossing bridges, to break step..... 149
crossing streams on ferries..... 150
duties of, with regard to reporting information obtained..... 39, 40, 41, 53, 62 (86)
fire..... 251, 252, 254, 260–265, 272, 274, 276, 277, 280, 281
fords for, depth of..... 149
halts on the march, see "**halts.**"
ice, thickness of, to support..... 149
intrenching tools invariably carried into action by..... (161)
intrenchments, see "**trenches.**"
march formations, see "**marches.**"
night attacks..... 266, 267
organization, see under "**organization.**"
patrolling by, see under "**patrols,**" "**reconnoissance,**" etc.
position of, on the march..... 105, 110, 145, 158, 161
in the defense..... 276
rate and length of march..... 147, 160
reconnoissance, see under "**reconnoissance.**"
spaces, camp, and road..... (214)–(216)
with advance guards..... 46, 95, 96, 99, 104, 105, 110, 166, 168
with flank guards..... 46, 95, 96, 112
with outposts..... 46, 95, 96, 125, 128, 131, 135
with rear guards..... 46, 95, 96, 116, 118, 121, 159, 170
Infirmaries..... 301
Information, bureau of, (or inquiry office) for prisoners of war..... 23, (195), (196)
regulations governing.. (196)–(197)
division, establishment and functions of..... 17, 38
officers, duties of..... 63
service of, see "**service of information.**"
Inhabitants of occupied and unoccupied territory, see "**belligerents.**"
territory, sanitary supervision over..... 298

Insignia, red cross, certificate of identity furnished persons without military uniforms ... 286
how worn and used ... 286 (190)
Inspection, sanitary, of troops prior to field service ... 292
Inspector General's Department ... 3, 18
Instructions, see **"advance, flank, rear guard, outpost, independent cavalry, etc., etc."**
Interments ... 305
International red cross convention, articles of ... 307
Internment of belligerents ... (200)
Intrenching tools, see **"tools, intrenching."**
Intrenchments, see **" trenches."**
Issues, extra, of rations ... 210
of ammunition, see **"ammunition supply."**
emergency rations ... 205
fresh bread ... 212
meat ... 211
fuel and forage ... 204
rations ... 205-208, 210-213, (223)
soap, candles, and matches ... 205
supplies to division supply officers direct ... 12, 22, 199, 200, 204, 208, 217
Judge Advocate General's Department ... 3, 16

K.

Kitchen cars ... 206, 244, 247
Kitchens, families not to be deprived of, in billeting ... 179
in camp ... 190, 214-216
location of, in camp ... 190 (116)-(118)
Kites, employment of, to obtain information ... 56
Kits, surplus, weight of, carried in field trains ... 231

L.

Labor, impressment of, in a hostile country ... 198
Land forces, organized, of the United States ... 1 et seq.
Landmarks, use of, by patrols ... 50, 51
Lanterns, to mark position of ammunition train ... 219, 223
sanitary formations ... 286
stream crossings, etc ... 149
streets during night marches ... (105)
wagon trains, in night marches ... 161
Latrines, in permanent camps and cantonments ... 190
location, and establishment of ... 187-190
to be covered before starting on march ... 146, 190
Laws of war ... 308-314
Leaders, patrol, qualifications and duties of ... 50-54
"Leading troops," description and duties of, in retreat ... 111
Length and rate of marches ... 142, 147, 155, 160
of columns, data for ascertaining ... 52, (214), (215)
marches, general principles affecting ... 142
Letters of instruction, see under **"orders."**
Levies of money and supplies ... 198, (198)-(199)
Line, firing ... 261, 276

Line of communications, see also Appendix H.
administration and control ..... (226)
advance sections ..... (227), (234)
base section ..... (227)
bureau chiefs, functions of ..... (222)
commander of, functions and duties 12, 198, 199, 200, 202, 306, (224), (225), (226), (229)
district of ..... (234)
port of embarkation, duties of ..... (224)
the field forces, functions of in theater of operations. (224), (225)
concentration camps, definition and location of ..... (224)
of troops, how effected ..... (224)
correspondence, channels of ..... (229)
department commanders, functions of ..... (223)
depots ..... 12, 199, 200, 202, 204, 208, 217, 223, 226, 306, (128), (222), (224)–(227), (229)–(233)
diagrams of ..... (128), (230)
districts and commanders of ..... (234)
division into sections ..... (226)
established for each field army or important expeditionary force 12, (225)
establishment of advance supply depot of 200, (227)
base of 199, 202, (225)
forage and rations during concentration ..... (223)
headquarters of ..... (234)
advance section of ..... (227)
hospitals 12, 33, 60, 181, 182, 199, 226, 260, 276, 286, 300–303, 306, (39), (222), (225), (226), (227), (230), (232), (233)
intermediate sections ..... (227), (234)
location of head 119, (205)
mobilization camps, definition and location of ..... (223)
how effected ..... (223)
organization, table of personnel ..... (231)–(234)
organized when ..... (225)
persons en route to join field forces, duties of ..... (226)
provost marshal of 23, (231)
public and private animals, etc., during mobilization ..... (131)
rations and forage during concentration ..... (223)
during mobilization 206
requisitions from field forces, where sent ..... (227)
sanitary service of 12, 16, 33, 199, 306, (128), (222), (225), (226), (227), (230), (232), (233)
service of defense ..... (226)
military railways ..... (227)–(229)
supply ..... (226), (227)
the interior ..... (222)
the theater of operations ..... (222), (224)
signal troops to maintain lines of information 32, (225), (227)
supplies sent to base for field forces, how consigned ..... (227)
requisitions for, to whom sent ..... (227)
telegraph service 32, (225), (227)
theater of operations, functions of War Department in ..... (224)

Line of communications, see also Appendix H—Continued.
transportation facilities 199, (227)
use of in bringing up ammunition, rations, and forage ..... (227)
use of in bringing up other classes of supplies ..... (227)
under command of whom 12, (225)
control of whom 12, (225)
wounded, evacuation of ..... (227)
zone ..... (225), (226)
Line of observation, outpost 128–132, 141
instructions for sentinels on 133
Line of resistance, outpost 126–128, 131, 141
Lines of communication (or lines of information).
between commander of ammunition train and commander of artillery 219
commander of ammunition train and division commander 219
fractions of advance guard and main body 99, 100, 107
flank guard and main body .. 112
outpost and main body 136, (78), (120)
rear guard and main body ... 116, 120, 121
independent cavalry and supreme commander ..... (49)
in attack, establishment of ..... (164)
in the defense 277, (174)
line of communications ..... (225), (227)
service of, by signal troops, in general 20, 32
Litters, company, how carried 234, 293
Loading of trains, railroad 246
Loads for Army wagon 220, 229–232, 236
artillery caisson 219
pack animals 237
wagons, combat trains 219, 220, 232, 234
field 229, 230, 231, 232
Locomotives, armored, when used 175, (226)
Long columns, regulation of halts for, on the march 148

M.

Machine guns, use of in defense 125, 281
in passing defiles and covering river crossings 99, 116
in the attack of a wagon convoy 173
on interior water lines 176
to command approaches and check sudden advances of the enemy ..... (78)
transportation of, in dirigible balloons ..... (55)
with advance guards 99
cavalry, join artillery supports when 271
outposts 125
rear guards 116
Machine rifle, automatic ..... (20), (22), (55)
Main body, change of direction on the march 113

Main body, communication between and advance guard 99, 100, 107
flank guard 106, 112
outpost 136, 187
rear guard 116, 120, 121
composition of, on the march 158
distance of covering detachments from, see also "**advance** and **independent cavalry, advance, flank** and **rear guards**, and **outposts** 146
duty of advance guard to protect march of 97
in wagon convoys 169
referred to in orders (see also Appendix D) 86
Maintenance and establishment of connection between ammunition train and troops in action 219
Maps, see also "**sketches**" 37, 38, 50, 59, 127, 270, (55)
conventional signs and abbreviations on ..... (204)–(205)
scales and contour intervals 59
Marauders 122, 152
March, across country, formations for ..... (93)
ambulance companies, position of, on the 302
company trains, position of, on the 302
ambulances, position of, on the 145, 234, 302
ammunition trains, position of, on 145, 158, 159, 221, 223
arrangements for breakfast on the 146
dinner and lunch on the 214
artillery, position of, on the 44, 105, 110, 145, 158, 159, 161
auxiliary division, troops of, on the 10
baggage, allowance of, on the 230, 231
unauthorized, on the 228
balloon trains position of, on the 159
bands, use of, on the ..... (99)
bridges, fords, and other obstacles on the 149
bridge trains, position of, on the 105, 159
camp or bivouac on the, see also under "**shelter**" 153, 184, 187, 189
care of troops on the 151, 214–216, 302–304
cavalry, during a night 161, (89)
position of, on the 110, 145, 158, 161
change of direction of main body on the 113
column formations of the several arms on the 145, 155, 158
combat trains, position of, on the, see also "**trains, combat**" 145
commanders, position of, on the, see also under "**commanders in the field**" ..... 87, 101, 151, 302, (206)–(213)
compliments on the 142
detailing outposts on the 127
details to accompany trains on the 159, 228, 233–236, (42)
distances between different units on the 146, 155
distance of main body from advance guard, regulation of 100
distribution of troops on the 145, 158, (206), (208), (212)
eating and drinking, excessive, should be prevented on the 151
engineers, position of, on the 105, 110, 145, 158
equipments of men, how carried, on the 231, 232, 302
ferries, crossing streams on 150
field hospitals, position of, on the 302
trains, position of, on the 122, 145, 155, 158, 159, 230, (212)
flank 113
forming new advance guard for 113

March, fords, rules for crossing 149
formations 142, 144, 145, 155, 158
in hot weather or on dusty roads 155
fuel and forage on the 204
halting places on the, selection of 151
halts on the, see also **"halts"** 17, 48, 95, 124, 148, 149, 151, 153, 157, 160, 187, (99), (209)
hour for start of the 146, 148
ice, thickness of, to support troops 149
infantry, position of, on the 105, 110, 145, 158, 161
initial or starting point of the 144
intermingling of foot and mounted troops should be avoided on a 145
latrines and kitchen pits to be filled before resuming 146, 190
meeting of separate columns on the 157
messages, unsealed, along the line of, may be read by commanders 64
messing arrangements on the 146, 207, 214, 215, (147)
military prisoners, disposition of, on the 152, 159
mounted men and men on wagons to dismount on steep slopes ..... (95)
officer who sets the pace of a ..... (94)
on trails ..... (93)
orders, see also **"orders"** 144
pack train, length of 237
pack trains, position of, on the, see also **"trains, pack"** 145, 158, 159
police on the 152
preparation 142, 143, 242, 292
provost guard on the 152, 159
rate, change of, troops to be warned ..... (94)
for field and supply trains ..... (94), (95)
uniform should be maintained on the ..... (94)
rear guard on the, to join commands when action begins 159
reserve supplies to be taken on the 143
rests 142, 148
one day in seven required on a long 142
road spaces 144, (214), (215)
rules for meeting columns on the 157
rules for the 142, 155, 157
sanitary service on the, see also **"sanitary service"** 151, 288, 302
salutes by individuals on the 142
sanitary units, position of, on the 105, 122, 145, 158, 159, 302
signal troops 145, 158
security on the, see also **"service of security"** 95
general principles of 94
shelter on the, see also under **"shelter"** 184
sick and wounded, care of, on the 302
signals for putting command in 146, (96)
start of the 146, 148
starting or initial point of the 144
stragglers on the 21, 152, 159, (93)
straggling on the, duty of all officers and noncommissioned officers to prevent 152, (93), (98)
supply trains, position of, on the 145, 155, 158, 159, 201, 236, (212)
rate and length of ..... (94), (95)
table ..... (207)
tentage allowance on the 231
through defiles 99, 116, 149, 158, 168

March, vehicles, unauthorized on the 228
wagons, broken or stalled on the 159, 165
water supply, duties of advance guard in replenishment of 151
for canteens, replenishment of 151
sources of, to be examined and marked 151
on the 151
when carried in wagons ..... (98)
Marches 142–161
across country ..... (93)
and convoys, see also **"convoys"** 162–176
changing station 155
classification of 154
concentration 157
field orders used for, when 144, (101)
flank 113
forced 160
when resorted to 142, 160
general principles governing 94–96, 142
in the presence of the enemy 158
night 119, 158, 161, 190, (89)
lanterns, use of, in 149, 161
precautions to be taken during 119, 161
on trails ..... (93)
orders issued for, see **"orders"** 144
practice 156
preparation for 142, 143, 242, 292
rate and length of 142, 147, 155, 160
routine orders used for, when 144, 155
secret, precautions necessary during 161
signals, trumpet for striking camp, etc 146, (96)
through defiles 99, 116, 149, 158, 168
Marks, distinguishing, for night operations 267
Material, railway, from neutral territory, laws of war concerning ..... (201)
Red Cross, revision of Geneva Convention concerning ..... (189)
Maximum slopes for various arms and railroads ..... (219)
Measures, weights, etc., of forage and subsistence ..... (217), (218)
taken to protect a command 94, 95
Meat, fresh, issue of, in the field 211, 213
Medical Department, see also **"sanitary service"** 29, 285, 288
Mess, officers, see **"messing."**
sergeants, company, duties of, during combat ..... (140)
tables 190, 216
Message, field, by wire, should be written 62
when advisable ..... footnote 62
"confidential," to be sealed 64
connecting posts for transmission of 67
copies of, to whom sent 63
distinction between, and report 58
duplicate, when sent 66
envelope containing, to have written data on 64
exact hour, sent or received, to be noted 60
how generally sent 57, 61, 62, 64–67, (203)
important, how sent 66
instructions for patrols regarding 49
may be relayed 67

Message, field, messenger bearing, to have knowledge of contents 66
messengers not to alter pace in passing superiors 66
rate of speed of bearers of, to be indicated 64
rules for clearness and brevity of 57, 76, 77
sketches may be used to supplement 59
sources of information to be given in 57
transmission of, duty of all officers to assist in 62
U. S. Army, blanks, by whom issued, etc ..... (203)
patrol leaders should have 50
form for ..... (203)
unsealed, may be read by commanders 64
when to be sent in cipher 65
where to be sent or place of commander to be stated in orders 87
Messing, arrangements for 51, 131, 135, 141, 206, 214–216, (147), (223)
on outpost 131, 135, 141
patrols 51
bakeries 31, 188, 212, 216
company commanders to constantly supervise 214
control of, in the field 135, 141, 214–216, 247
cooking utensils, when combat trains may carry 214
to be kept scrupulously clean 216
for battalion officers 215, (147)
officers, all may be required to mess with organizations 215, (147)
of company units 215
regimental commander and staff 215, (147)
formations of officers for, regulated by commanders 215
kitchen cars 206, 244, 247
kitchens for 190, 216
on marches, breakfast to be had before starting 146
dinner to be had after arrival of trains 214
light lunches carried by men 214
outfits, how carried 214, 230, 231
shelter for company messes, location of, in camp 186
Methods of subsisting in the field 205, 207–216
Militia, organized ..... 1, footnote 3
Mines, submarine, coast artillery corps charged with care and use of 28
contact, laws of war pertaining to 312
Mobilization, animals, draft, pack, and riding during, how transported ..... (131)
arrangements for the accommodation of troops during 182, (223)
assignment of troops to shelter during 182, (223)
combat and field trains, draft animals, public and private mounts, etc 242, (131)
corrals, wagons, and pack trains, locations of 182
depots and storehouses to be placed at railroad sidings 182
hospitals to be erected near railroad station 182
how generally effected 206, (223)
integrity of administrative units to be preserved 182
methods of subsisting during 206
number of rations to be carried by troops during 206
rations and sales stores in 206, (133)
rendezvous camps, animals, and wagons may follow troops 242
rules for selecting site 182
shelter during 182, (223)
Mobilization, staff officers to meet troops at station, and personally conduct them to quarters 182
Models of field orders (forms) ..... 84–90, (206)–(213)

Mountain artillery, see "**artillery.**"
Mounted troops, see "**cavalry.**"
Mounts, see "**animals.**"
Movements by rail, see also "**rail transportation**" ..... 175, 203, 206, 238–248, (224), (227)–(229)
water 176, 203, 206, 249, (224)
Mules, see "**animals, draft, pack, and riding.**"

N.

Names of messengers to be on envelopes containing messages 64
places, roads, etc., how written in orders and messages 76
Naval convoys 176
Neutral persons, laws of war affecting ..... (201)
powers, rights, and duties of ..... (199)–(200)
territory, internment of belligerents and care of wounded in ..... (200)
Night attacks, conduct of 267
use of badges and watchwords during 267
defense at 283
marches 119, 158, 161, 190, (89)
method of naming a 92
operations, when undertaken 266
outpost dispositions, etc., see also under "**outposts**" 129–131, 141
withdrawal of defeated troops 121
Noncommissioned officers, certain, and cooks, during combat ..... (140)
duty of to prevent straggling 152
may command combat trains 234
senior in each railroad car, responsibility of 247
Noneffectives, convalescents, etc., as guards for field trains 233
Normal equipment, rations part of, in campaign 207
Normal load for army wagon 229
freight cars (capacity) ..... (217), (218)
pack animals 237
Notation of exact hour sent and received on messages 60
Notations required on envelope containing field messages 64
Number of troops in marching columns, estimation of 52

O.

Observation from captive balloons, kites, etc 56, (164)
groups, defined 131
line of, for outposts 128–132
outpost, instruction for sentinels on 133
Obstacles, fords, etc., on marches 149
Offensive, advantages of, etc., see under "**combat.**"
"**Offensive returns**" defined ..... (172)
Office, inquiry, for prisoners of war 23, (195), (196)
Officers, see under "**commanders in the field**" and "**organization.**"
Officers' baggage and tentage allowance 231
Officers, duties of all to assist in the transmission of orders and messages 62
"**Officers, information**," duties of 63
Officers, knowledge required concerning the tactical employment of the several arms 257
messes 215, (147)
patrols 50
taken prisoners, pay of ..... (196)

Operations, base of ..... 12, 199, (128), Appendix H
night 92, 119, 121, 129, 141, 158, 161, 266, 267, 283
siege 19, 124, 125, 139, 180, 192, 262, (197)
Orderlies, for headquarters of brigades, divisions, and field armies 15
Orders 68–93
classification of 69
Orders, field, abbreviations in 89, 90, 92
advance guard, see "orders, field," for advance guards.
affirmative form of expression to be used in 76
arranging matters too far in advance inadvisable 80
"attack, secondary," the term never used in ..... (211)
authentication of 88
body of 87
brevity to be sought in 77
by subordinate commanders, to name location of lines of information 87
subordinates, not to be mere repetitions 82
wire or signals, distribution of troops in 86
compass bearing in 76
composition of 75–83
dates, how shown in 92
detachment, definition of 91
distribution of copies of 72, 74, 88
troops in 86
division into paragraphs 87
entire responsibility to be accepted by commander 78
estimate of the situation to be made before drafting 75, 98
expressions that should be avoided in 76
are forbidden in 78
flank guard 95, (208)
for a halt 95, 124, 127, 153, 187, (209)
place of assembly for sick generally designated therein 187
a position in readiness 95, (210)
a retreat 83, 95, 115, 121, (212)
advance guards (by advance commander) 101, (207), (209)
advance guard (by supreme commander) 95, 98, 100, (206), (208)
an advance 95, 98, 100, 144, (208)
tactical components of command to be designated 98, 144
an attack 95, 259, 271, (211)
billeting ..... (127)
defensive positions 95, 275, (211)
flank guards 95, (208)
movement by rail 238, 246
movement by rail should give exact return of command 238
outposts (by outpost commander) 127, 128, 135, 141, (210)
(by supreme commander) 95, 124, 153, 187, (209)
patrols 49
practice marches ..... 156, (208)–(213)
rear guards (by rear guard commander) 117, 121, (213)
(by supreme commander) 95, 115, 121, (212)
reconnoitering detachments 49
form of ..... 84–88, (206)–(213)
framing of 75

Orders, field, geographical names to be written in Roman capitals 76
heading of 85
hour when issued 74
how and to whom communicated 72
information of the enemy to be given in ..... 87, (206)–(213)
supporting troops to be given in ..... 87, (206)–(213)
integrity of tactical units to be preserved, etc 75
issue of 72, 74, 88
letters of guidance preferable to, when 80
instruction in lieu of 70
location of commander or where messages may be sent ..... 87, (206)–(213)
mission to be considered in framing of 75
models for (forms) ..... 84–88, (206)–(213)
organizations, fractional, how designated in 90
tactical, how designated in 90
originals to be preserved 69
outpost, see "**orders, field,** for outposts."
parts of 84
plan of commander to be given in 87
rear guard, see "**orders, field,** for rear guards."
reasons for measures adopted to be avoided 77
retreat, to whom communicated 83, 115
roads, how designated in 76
rules for making clear and definite 76
"secondary attack," the term never used in ..... (211)
sequence of paragraphs of 86, 87, (206)
signature ..... 88, (206)–(213)
hour of 74
tactical and strategical operations prescribed by 70
testing of, before issue 93
time and place, details of to be carefully stated in 81
titles, how expressed in 89, 91
transmission of, duty of all officers to assist in 62
trespassing upon province of a subordinate prohibited 79
verbal, how issued 72
messengers required to repeat 73
words "noon" and "night" in 92
written, how issued 72, 74, 88
general and special 69
military, definition of 68
routine, definition and use of 69, 71, 155
Ordnance Department 3, 29, 195
personnel with line of communications ..... (232), (233)
Organization 1–35
ambulance company 33
ammunition train, division ..... (42)
animals for cavalry, infantry, etc., see "**animals.**"
army, composition of 11
artillery, see "**organization** band, battery, battalion, and regiment."
auxiliary division, composition, and duties of 10, 32, 159, (39)
auxiliary troops of a field army 10
bakery, field 31
band, cavalry ..... (22)
coast artillery ..... (31)
engineers, corps of 27

Organization, band, horse artillery ..... (26)
infantry ..... (20)
light artillery ..... (24)
mountain artillery ..... (27)
battalion, as a rule tactical unit only 4
combat train ..... (40)–(41)
engineers, pioneer ..... (29)
engineers, ponton ..... (29)
field train ..... (41)
horse artillery ..... (25)
infantry ..... (20)
light artillery ..... (23)–(24)
mountain artillery ..... (26)–(27)
signal corps, aero-wireless ..... (34)
field ..... (33)
battery, horse artillery ..... (25)
light artillery ..... (23)
mountain artillery ..... (26)
brigade, see also "**brigade**" 5
brigadier general, appropriate command for 5
bureau of information for prisoners of war 23
cavalry, see "**organization** band, troop, squadron and regiment."
chaplains 3, 28
coast artillery corps 3, 28
combat train ..... (40)–(41)
commanders and staffs of battalions and higher units, see also under "**commanders in the field**" 13–23
"commander of trains" ..... (42)
company, ambulance ..... (35)–(36)
coast artillery corps ..... (31)
engineer, pioneer ..... (28), (29)
ponton ..... (29), (30)
field train ..... (41)
infantry ..... (19)
provisional machine gun ..... (19)–(20)
signal corps, aero ..... (34)
field ..... (33)
telegraph ..... (232), (233)
wireless ..... (34)
wagon ..... (39)
corps of engineers 3, 27
division 6, 35
division ammunition train ..... (42)
auxiliary 10, 32, 159, (39)
bridge equipage, heavy ..... (30)
light ..... (30)
cavalry complete ..... (45)–(46)
cavalry, supply and ammunition trains ..... (42)
combat and field trains ..... (40)–(41)
complete ..... (43)–(44)
line of communications personnel ..... (231)–(234)
mounts and transportation ..... (36), (38), (44), (46)
sanitary personnel 33
staff 16
supply train ..... (42)

Organization, field army 10
sanitary personnel for headquarters of ..... (39)
artillery, see "**organization**, artillery."
bakeries 31
hospitals 33, (35), (36)
trains, battalion ..... (41)
company ..... (41)
division ..... (40)–(41)
regimental ..... (41)
general, appropriate command of 11
general officers 3, 5, 6, 10, 11
headquarters' guards 15
hospital train personnel ..... (233)
infantry, see "**organization** band, company, battalion, and regiment."
information division 17, 38
land forces, organized, of United States 1–3
lieutenant general, appropriate command of 10
line of communications ..... 16, 199–202, (128), Appendix H
sanitary personnel. 306, (39), (226), (232), (233)
staff ..... (16), (231)–(234)
major general, appropriate command of 6
medical department 29, 33
medical transport column personnel ..... (233)
organized militia, armament, organization and discipline of ..... footnote (11)
pack train ..... (40), (44), (45)
ponton transportation ..... (30)
provost guards 15, 21
provost marshal general, command of 21
regiment, cavalry 25
field artillery 26
horse ..... (25)–(26)
light ..... (23)–(25)
mountain ..... (26)–(28)
field train of a ..... (41)
infantry 24
regular army 3
sanitary personnel, distribution of ..... (35)–(38), (232), (233)
mounts and transportation for ..... (36), (38)
signal corps 20, 32
squadron, as a rule tactical unit only 4
cavalry ..... (22)
combat train ..... (40)–(41)
field train ..... (41)
staff corps 29
supply department, see also under "**line of communications**" 22
trains, division ..... (42)
trains, field, company, battalion and regimental ..... (41)
troop, cavalry ..... (21)
both administrative and tactical unit 4
field trains ..... (41)
provisional machine gun ..... (21)–(22)
units of organization 4–12

Organization, volunteers ... 2
wagon company ... (39)
Outguards, see under "**Outpost.**"
Outpost, advance cavalry with ... 45, 125, 128, 136
and main body, distance between ... 126, 135, 141
artillery, use of, with an ... 125, 135
cavalry with an ... 42, 45, 95, 96, 125, 128, 130, 135, 141
extent of section occupied by squadron ... 141
independent ... 141, (89)
challenging ... (84)
change of advance or rear guard to outpost and reverse ... 115, 124, 125, footnote (209)
changes for the night ... 129, 130, 131, 141
commander, duties of ... 123, 127, 128
instructions to ... 124, 127
communication between parts of, and main body ... 136, (78), (120)
communications, lateral and rear ... 128
compliments not paid by troops on ... 95
composition and strength of ... 45, 95, 125, 135
countersign, use of, by ... 124
deserters, how received by ... 133
detached posts, routes of, to their positions ... 128
distance between, and main body ... 126, 135, 141
line of resistance, and reserve ... 135, 141
distribution of troops of ... 94, 128
during bivouacs ... 125, 153
sieges ... 125, 192
duties of ... 123
engineers, use of, with ... 125
examining posts ... 139
extent of section covered by battalion ... 127
squadron ... 141
field trains to accompany, when ... 95, 125
fires, use of, by ... 131, 132
firing by ... 124
flags of truce, how received by ... 133, (197)
for a small command ... 137
for wagon convoys ... (109)
formations assumed by ... 94
formed temporarily of cavalry, when ... (77)
front covered by battalion on ... 127
squadron on ... 141
functions of ... 94
in presence of the enemy ... 125, (79)
integrity of tactical units should be preserved in, etc ... 95
intrenchment by ... 125, 126, 128, 131, 141, 256, 277, (220), (221)
line of observation, location of ... 128–132, 141
resistance, distance of from main body ... 126, 135, 141
reserve ... 135, 141
requirements of ... 126
sections of, given in outpost order ... 127, 131
lines of information and communication with ... 125, 126, 128, 131, 132, 135, 136, (120)
resistance and observation, relative positions of ... 123
machine guns with ... 125

Outpost, messing arrangements by 131, 135, 141
night, or fogs, changes affecting disposition in 129, 131
not to mask fire of main position, when 125, 283
obstacles, use of, by 126
officers on, allowed great latitude 124
order, by outpost commander, see also **"orders"** .. 127, 128, 135, 141, (210)
orders to the commander of the 124
outguard commander, challenging by 133
outguards, composition of 131, 132
duties of 132
how numbered 132
retention of weapons and equipments ..... (83)
sentinels 132, 133
patrolling renders fewer sentinels necessary 126
patrols, classification and duties of, see also under **"patrols"** 138
visiting, approach sentinels from rear and under cover 133
position, changes in 128, 129, 130, 131
division of, into sections 127, 128
inspection of, by outpost commander 128
limits of, how designated 126
should be occupied before dark 128
selection of 126
sketch of, by support commander 131
strengthening of, see also **"trenches"** ..... 126, 131, 141, 256, 277, (220)–(221)
posting of detached posts 128, 134
outguards 131, 132
sentinels 131, 132, 133
supports and reserves 128, 131, 135
ranges to conspicuous objects to be measured 126
reconnaissance, cavalry charged with the duty of ..... (77)
reconnaissance 42, 45, 46, 123, 125, 128, 131, 132, 138
personal, by support commander 131
relieving the 140
reserve 135
arms and equipments, disposition of 135
centrally located near junction of roads 128, 135
communications with supports and main body 136
distance between, and main body 126, 135, 141
line of resistance 135, 141
in combat, action of 135
infantry to remain under arms when 135
may be omitted for small command 137
messing arrangements by 135
route of, to its position 128
word to be sent by, to main body in case of alarm 135
route of supports and detached posts to their positions 128
sanitation on 190, (79)
sentinels, detached posts 134
deserters, how received by ..... (84)
duties of 133
flags of truce, how received by ..... (84)
how posted and numbered 133
indications of enemy to be reported by 133
instructions given to 133

Outpost, sentinels, night duties of 133, 141
number of, necessary 133, 141
on line of observation, instructions for 133
outguard 132, 141
over supports 131
relief of 140
selection of posts of 133
should be approached from the rear 133
use of cover by 133
patrols in lieu of 125, 126, 128, 129, 132, 138
to halt persons approaching post at night (challenging done by outguard commander) 133
videttes 141
shelter for, during sieges may be left standing 192
shelter tents, use of, by 191
signal troops, duties of, in connection with 125, 136
sketches 59, (82), (204), (205)
strength and composition of 95, 125
strengthening position of, see also **"trenches"** 126, 131, 141, 256, 277, (220), (221)
supports 131
arms and equipments, disposition of 131
commander, duties of 131
communications with adjoining, and reserve 128
fires, rule concerning 131
how numbered 131
line of resistance, sections occupied by 127, 128, 131
may be omitted for small command 137
messing arrangements by 131
mounted messengers with 131
posted generally so as to command roads 128
routes of, to their positions 128
tour of duty of an, during a retreat 115, 140
an advance 124, 140
trumpet signals sounded by 124
use of artillery with 95, 135, (78), (85)
cavalry with 45, 95, 96, 125, 128, 130, 135, 141
engineers with 125
infantry with 46, 95, 96, 125, 128, 131, 135
machine guns with 125
sanitary troops with 125
searchlights with 125
signal troops with 125, 136
wagon convoy 171
Ovens, improvisation of 216

P.

Pack animals, see also under **"animals."**
length of march for 237
loads for, average weight of 237
Pack outfits to be carried in ammunition wagons of combat trains 234
Pack train, consolidation with field and supply trains 159
organization of ..... (40)
position of, in combat 159, 260, 276, (212)

Pack train, position of, on the march ..... 158, **159**, **(212)**
road space ..... (214)
Pack trains, use of, in combat 222, (164)
to supply troops 237, (164)
Pack transportation 237
Packets, first aid 296
Packs of men, disposition of during combat ..... (165)
when carried on field or combat trains 232
Paragraphs, field orders to be divided into 87
Park, engineer 10, 227
wagon, of convoy 166, 168, 171, 172, (108)
Party, advance 104
rear 118
Patrols, see also **"reconnoitering detachments."**
advance guard 46, 104, 106, 109
arrests by 51
artillery officers with 50
as flank guards 104, 106, 112
assembly place to be selected for 51
by independent cavalry 44
cavalry 42, 44–46, 48, 106, 109, 125, 130, 270, 271
with outpost supports 130
civilians, how questioned by 51
combat 271
concealment by, necessary 47, 51, 133, 138
place of, overnight 51
countersign, use of, by 50
crossing line of observation to inform sentinels of direction, etc 138
definition of ..... (50)
distant, use of in providing security for a scattered cavalry command 141
duties of, as to reporting information obtained 39, 40, 41, 53, 62, (86)
enemy, discovery of, should be promptly reported by 53
discovered by, what should be reported concerning 53
enemy's, operations of divisional cavalry against 45
equipment of 48, 50, 51
fire when 47, 138
first sent out by new outpost to be accompanied by members of old. 140
flank, reconnoissance by, from advance guards 104, 106, 109
formation for 48, 51
small 51
from outguards, along line of observation 132, 138
supplementary to sentinels 132, 138
three reliefs required 133
outpost supports, beyond line of observation 132, 138, 141
on flanks of position 138
guides for 50
halts by, rules for 51
indications of the enemy to be observed by 52
infantry, with advance guard supports 104, 106
outposts 132, 133, 138
information to sentinels on outpost should be given by 133
should be given by sentinels on outposts 133
inspection of, by officer ordering 48
by leaders 50

Patrols, leaders of, how equipped 50
qualifications of 50
selection of 50
members of, selection of 50
messages, see "**messages, field.**"
by, duplicate, when sent 66
important, how sent 66
mounted, assisting advance party 104
number and strength of, and when sent out 48
officers', preliminary to cavalry combat 270
orders or instructions for 48, 49
outpost, reconnoitering, composition of 138
duties of 138
visiting, composition of 138
work of, regulated by support commanders 140
precautions as to weapons, equipments, and horses of 48
preceding advance party of advance guards 104
reconnoitering duties of 47
returning, rate of march of 51
report information to nearest sentinel on outpost line of observation 138
second in command to be designated for 48
signals used by 54, 138
skillful work of, basis of efficient reconnoissance 50
strangers not allowed to precede ..... (53)
strength of passing troops, how estimated by 52
subsistence for, how provided 51
telegrams and mail matter may be seized by 38, 51, (199)
time of return to be stated in instructions for, when 49
use of, in lieu of sentinels for outpost duty 125, 126, 128, 129, 132, 138
preliminary to combat, see also under "**reconnoissance**". 253, 271
to offset difficulties of observation on outposts 125, 126, 128, 129, 132, 138
villages, how entered by 51
visiting, to approach sentinels from the rear and under cover 133
Pennants and flags, see "**flags** and pennants."
Permanent camps, see under "**shelter.**"
Personal equipment and arms of men falling out on the march, disposition of. 302
Personnel, sanitary, of division, etc ..... (35)–(39), 302, (232), (233)
Pillaging forbidden 152, 198, (197), (198)
Pioneer battalion ..... (29)
Pioneer company ..... (28), (29)
Place of commanders, or where messages may be sent, see under "**commanders in the field**" and "**orders, field.**"
Places, names of geographical, how written in orders 76
Point, advance guard 104
"**Point, initial,**" of a march 144
Police guard of wagon convoy 164
Police of camps 146, 190
on marches 152
Ponton battalion ..... (29)
Ponton company ..... (29), (30)
Ponton transportation ..... (30)

Position, captured, artillery to occupy 263
defensive, division of, into sections 277
extent of, to be prepared for occupation 278
occupation of, by rear guard 121
requisite features of a 274
strengthening of the 252, 256, 277
of latrines in camp ..... (119)–(121), (123), (124)
of places, method of fixing in orders 76
outpost, division of, into sections 127, 128
selection and preparation of 126
rear-guard, reconnoissance of, by staff officers ..... (76)
reconnoissance of a, for attack 253, 267, 268, 270
for defense 273
sketches 59, 60, (204), (205)
strengthening the, for defense, see also "**trenches**" 252, 256, 277
"**Position in readiness**," defined 284
order for ..... (210)
"**Position of rendezvous**" ..... (164), (168), (170)
Positions in combat and on the march; of ambulances, ammunition trains, artillery, bands, bridge trains, cavalry, company officers, engineers, infantry, field hospitals, field trains, sanitary personnel, sanitary troops, sanitary units, signal troops and supply trains, see under "**ambulances**," "**ammunition trains**," etc.
Postal service 15, 21, 30
Posting of sentinels, outguards, etc., see under "**outposts**."
Posts, examining 139
Practicability of slopes ..... (219)
Practice marches 156
Preliminary operations and reconnoissances to combat 253, 267, 268, 270
Preparation of cars for rail transportation 245
haversack and emergency rations, instruction in 215
for campaign ..... 143, 203, 257, 292, 296, 297, Appendix H
camps of concentration ..... (223), (224)
mobilization 292
marches 143
Preparatory stage in the conduct of the attack 260
defense 280
Principles, general, see "**rules, general, or principles.**"
Prisoners, convoys of 174
belonging to command to be put into fight 159
efforts to capture, when made 55
of war, bureau of information (or inquiry office) for 23, (195), (196)
superintendent 23
commandants of places of internment of 23
disposition of, in the field 21, 23
laws of war concerning ..... (194)–(196)
reception of, by examining posts 139
Private and public buildings in enemy's territory, use of, for sheltering troops 179
Property, how loaded in cars 246
Protection in camp and on the march, see "**service of security**."
Provost guards 15, 21, 152, 159, 187, (231)
Provost marshal 15, 23, 152, 159, 187, (231)
general 21, 23
Purchase of supplies ..... 197, (198)–(199), (226)
Pursuit, action of artillery, cavalry, and infantry in 264

Q.

Quartermaster Corps 3, 16, 29, 195
duties of the 22, 195, 203-213
organization of the 3, 16, 29
personnel of the, with a division ..... 30, (231)-(233)
Quartermasters, duties of, with field trains 145
wagon convoys 164
in front of the advance depot to keep daily diaries, when .. 213

R.

Rafts, instructions concerning use of 150
Rail, convoys by 175
Rail transportation 175, 206, 238-248
agreements and contracts for 239, 241
animals and wagon transportation, when to accompany troops 203, 242, 244
animals, instructions regarding shipment of 243-248
arms and equipment, except for guards, may be stored in baggage car 246
cars for, allotment of troops for 245
armored 175
assignment of 245
equipment of 245
inspection of 245, 248
kinds of, required 243
kitchen 206, 244, 247
loading, facilities for 245, 248
marking of 244
order of, in trains 244
preparation of 245
sleeping, when to be provided 243
conduct of troops, regulations governing 247
detraining and unloading, rules for 248
feeding and watering of animals 239, 247
guards, arms, and equipments for 246
en route 247, 248
line of communications ..... 12, (227)-(229)
loading and entraining, rules for 246
time required for 246
locomotives, armored 175
marking of property and cars 244
messing arrangements 206, 239, 244, 247
noncommissioned officers, responsibility of senior, in each car 247
orders for movement by 238, 246, 248
preliminaries for 238
property of organizations to be kept separate 244
route, itinerary of 239
size of trains for 240
stock trains 203, 242, 244
trains, armored ..... (226)
transportation requests for 239
Railway, field ..... 12, (227)-(229)
material coming from territory of neutral powers ..... (201)
service of military ..... (227)-(229)

Ramps, improvisation of, for unloading animals 248
Ranges, effective 255, 260
measuring and marking of, in a defensive position 252, 277, (79)
rifle, field artillery, and heavy artillery 255, 259
Ration, emergency 205, 206
instruction in preparation of 215
forage (see "**forage**" and "**grain**") 204, (217)
haversack 205, 207
instruction in preparation of 215
Rations, see also "**messing.**"
accountability for 22, 213
and ammunition, transportation of, precedence over other supplies ..... (182)
classifications of 205
during concentration ..... (223)
mobilization 206
transportation by rail and by water 206
extra issues of 210
haversack, carried in field trains 207, 230
supply trains 207
on the person 207
when used 214
issue of preliminary to combat 207
replacing of 214
issues of 208, 211, 212, (164)
number of, that may be carried on company wagons ..... (150)
weight of, and space occupied by ..... (217), (218)
Rear-guard action 121, 122, 159
and main body, distance between 119, 146, 159
cavalry, independent, use of, with exceptional ..... (74)
cavalry with 45, 95, 96, 116, 118, 121, 122, 159, 170
change of outpost to 115, 124
commander, duties of 115, 117, 121, 122
instructions to the 95, 115
position of 101, 118, (213)
qualifications of 117
compliments not paid by 95
composition of 45, 95, 116, 118, 120
communication between the parts of, and with main body. 116, 120, 121
demolitions by 121
distances between fractions of a 119, 146
distribution of troops of 94, 118, 158, 159
duties of 94, 95, 115, 116, 121, 122
field trains to accompany, when 95
follows trains, when 159, 122, 170
in action 121, 122, 159, 282
integrity of tactical units should be preserved in, etc 95
mounted troops to maintain communication with the commander of 121
night marches 119
obstructions of enemy by 121
of a wagon convoy 170
of an advancing force 122, 159
duties of, in combat 103
order 117, (213)
orders to 95, 115, 121, (212)
rear party 118

Rear guard, rear point ... 118
reconnoissance by ... 42, 46, 121
relatively stronger than advance guards ... (74)
reserve ... 118
strength and composition of ... 45, 95, 116, 118, 120
support ... 118
to be strong in cavalry and artillery ... (74)
tour of duty during a retreat ... 115, 124, 140
Reconnoissance, see under "**advance,**" "**flank**" and "**rear guards,**" "**outposts,**" "**patrols,**" "**service of information,**" and "**service of security.**"
a principal function of independent cavalry ... 44
advance posts, to delay hostile ... (173)
aerial, in combat ... 56, (164), (174)
air craft ... 56, 276, (164)
by advance guards ... 46, 104, 106, 109
cavalry patrols ... 42, 44, 45, 46, 48, 106, 109, 125, 130, 270, 271
from outpost supports ... 130
combat patrols ... 271
divisional cavalry ... 42, 45
flank patrols from advance guards ... 104, 106, 112
independent cavalry ... 42, 43, 44, 253, 268, 270
infantry ... 42, 46, 132, 133, 138
patrols from advance guard supports ... 104, 106
mounted patrols assisting advance party ... 104, 109
outpost support commander ... 131
patrols ... 47–54
concealment necessary in ... 47, 51, 133, 138
from outpost supports ... 132, 138, 141
number and strength of ... 48
outguard ... 132
rear guards ... 42, 46, 121
definition of ... 42
general staff officers may assist in ... 50
hostile, duty of cavalry to prevent ... 45
advanced posts for prevention of ... (173)
in combat, by artillery officers and scouts ... (163)
indications of the enemy in ... 52
in force, defined and by whom ordered ... 55
necessity for, in night attacks ... 267
of a position to be attacked ... 253
of a rear guard position ... 121
personal, by commander, of a defensive position ... 273
commander of outpost support ... 131
preliminary to combat ... 37, 253, 267, 268, 270, 273, 283
responsibility for ... 17, 48
strength of passing troops, how estimated ... 52
use of, in lieu of sentinels for outpost duty ... 125, 126, 128, 129, 132, 138
Reconnoitering detachments, see also "**patrols**" and "**reconnoissance**" ... 44, 46
conduct of ... 51
discovery of enemy to be promptly reported by ... 53
duties of as to reporting information obtained ... 39, 40, 41, 53, 62, (86)

Reconnoitering detachment, infantry and cavalry 46
leaders of 50
messages by, see **"messages, field."**
orders and instructions for 49
rules for observation of enemy by 53
selection of 48, 50
signals used by 54, 138
patrols, see also **"patrols"** and **"reconnoissance"** 47
Red Cross column ..... (232)
Red Cross Convention, international, articles of 307
application and execution of the ..... (190)
convoys of evacuation, rules for ..... (189), (190)
distinctive emblem of sanitary service ..... (190)
general provisions of the ..... (191), (192)
material, medical units ..... (189)
medical units and establishments ..... (188)
personnel, medical units and establishments. (188), (189)
repression of abuses and infractions of the ..... (190)
sanitary formations and establishments ..... (188)
sick and wounded, rules concerning ..... (187), (188)
Regiment, of infantry, cavalry, field and mountain artillery, see under **"organization."**
Regimental commander, see under **"commanders in the field."**
field train, defined ..... footnote (41), 230
infirmaries 301
Regular Army, composition of 2, 3
Relays 67
Reliefs, patrols, and sentinels on outpost 133
"Rendezvous position" ..... (164), (168), (170)
Reports, see also **"messages, field"** 58
Repulse, action in case of 265
Requisitions and levies of money and supplies ..... 198, (198)–(199)
Reserve, advance guard 105, 108, 110
seldom necessary for a single regiment 108
ammunition 235
for a field army 225
artillery ammunition 223
cavalry, use of, in combat 260, 276, 282
demolition material 227
general, commander of named in orders ..... (211)
employment of in strengthening position for defense 277
form of bivouac for 191
use of in decisive action 261, 271, 282
in combat 260, 261, 271, 276, 282
of grain, how carried in cavalry and artillery 204
of men at base of operations 202
outpost, see also under **"outpost"** 128, 135
may be omitted for a small command 137
rear guard 118
rolling, of rations and grain, how carried 201
sanitary stores, how carried on the march ..... (42)
supplies at depots 203, (226)
to be taken on the march 143
Resistance, line of 126, 128, 135, 141
Resources of country, should be drawn on for supplies 196, 198, 204, (42), (226)
divisional cavalry to furnish information regarding .. 45
exclusive reliance can not be placed thereon 198

Rest stations 306, (232)
Retainers to camp under provost marshals 15, 21
Retreat, duties of the advance guard in the 111
rear guard in the 121
orders for, to whom communicated 83, 115
Right flank, definition of 76
Rights and duties of neutral powers ..... (199)-(200)
Rifles and equipments, which may be carried packed in baggage cars 246
ranges of 255
River banks, method of describing in orders 76
Rivers, fording of 149
Road sketches 59, (204), (205)
Road spaces 144, 164, 165, (214), (215)
Roads, as controlling the selection of a camp site 185
information regarding, divisional cavalry to furnish 45
outposts posted generally so supports command the 128
Rolling reserve of rations and grain, how carried 201
Routine orders 69
Rules, general, or principles, governing in the following cases:
accountability for ammunition, fuel, forage, and subsistence stores 22, 204, 213, 218
ammunition supply 217
animals and vehicles, shipment of ..... (218)
bearers of verbal orders and messages 73
billeting 180, 188, 198
bivouacking 189
camp sanitation 190
clearness and brevity of field messages 57, 76, 77
in orders 76
commander of ammunition train during combat 219
conduct of patrols 51
convoy, wagon, size of 164
crossing streams 149, 150
details for service of security 95
distribution of troops in a defensive position 276
draft animals and vehicles, separation of ..... (219)
establishment of camps 187
firing by patrols ..... (86)
instructions given independent cavalry ..... (49)
patrols 49
intrenching tools, infantry 256
issues from supply trains 201
led horses ..... footnote (41)
lewies and contributions 198, (198), (199)
loading and entraining 246
map making 59, (204), (205)
marches 142, 155
messing 214, 215
night marches 161
operations 266
number and size of reconnoitering patrols 48
observing enemy by reconnoitering detachments 53
one column overtaking or meeting another on the march 157
provost and rear guards at the beginning of an action ..... (103)
retention of weapons and equipments by outguards ..... (82)
reporting of information obtained 39, 40, 41, 53, 62, (86)

Rules, etc.—Continued.
sanitation in camps 190
scales and V. I.'s of military maps and sketches 59
selection of a camp site 56, 126, 155, 171, 182, 183, 185, 186, (223), (224)
defensive position 274
patrol leaders 50
posts for sentinels on outpost 133
reconnoitering detachments 48, 50
shelter during mobilization 182
siting of trenches 277
supplying troops 196, 203
trains during combat ..... (174)
transportation by rail 206, 238–248
water 176, 203, 206, 249
unloading and detraining 248
verbal orders 73

S.

Sanitary service, see also "**ambulances**," "**field hospitals**," "**hospitals**," and "**transportation**" 285–307, (225), (226), (227)
administration of 291–298
ambulance companies, duties of 60, 295, 300–303
assembly place for sick, etc., in camp 187
band may be assigned to duty with in combat 303
base hospitals 12, 199, 306, (39), (230), (232)
camps for 186, 301, (232)
care of troops 151, 190, 214–216, 288, 302–304
inhabitants of occupied territory 298
contagious disease hospitals 306, (232)
diaries, war 60
diagnosis tags, use of 302, 303
dressing stations, establishment of 260, 276, 303
duties of ambulance companies 60, 295, 300–303
medical department 288
evacuation hospitals 12, 226, 306, (39), (225), (230)
examination and supervision of water supply 151, 288
field hospitals during combat 33, 60, 181, 182, 260, 276, 300–303
first-aid packets, use of 296, 303
stations, establishment of 276, 303
flags of 286, (190)
formations, sanitary, and establishments, how marked. 286, (190)
line of communications 306, (39), (225), (230), (232)
protection of, by belligerents ..... (188)
general hospitals ..... (222), (230)
guards for 287, 295, (188)
hospitals in camp, when set up 186
identification tags 297
infirmaries 301
inspections 292
inspectors, assignment and duties of 292
line of communications 12, 16, 33, 199, 306, (128), (222), (225), (226), (227), (230), (232), (233)
local hospitals 182

Sanitary service, medical supplies, shipment of, not to have precedence over ammunition and rations ..... (182)
medical transport column ..... (233)
on the march 151, 288, 302
personnel, ambulance companies ..... (35)
base hospitals ..... (232)
battalions, engineers and signal troops 27, 32
divisions ..... (35), (37)
evacuation hospitals ..... (233)
field hospitals ..... (35), (37)
general provisions concerning 33, 285–287, 290, 294, 295
headquarters of armies, field armies and divisions 33
hospital train ..... (232)
in hands of enemy, duties, pay and allowances of ..... (188), (189)
insignia 286, (190)
line of communications 16, 33, 306, (230), (232), (233)
medical officer to assist in selection of camp site, etc 185, 187, 288
mounts and transportation for ..... (36), (38)
number of, attached to organizations in the field 24–28, 32, (230), (232)
status of 287
titles of medical officers 290
quartermasters for 294
rules for camp sanitation 190
sanitary formations accompanying mobile forces 300
stores, how stored and issued 226
selection of camp site, medical officers to assist in 185, 187, 288
sick and wounded, arms and equipments of 302
assigned to ambulance trains when 302
care of 33, 143, 179, 187, 288, 303
disposition of 302
duties of belligerents and neutrals concerning ..... (187), (188), (196)
may seek nearest medical service, etc 33
search of battlefield for 304, (188)
stations, dressing, establishment of 276, 303, (164)
first aid, establishment of 276, 303
for slightly injured, establishment of 303
rest ..... (232)
tents for the sick in campaign 181
transportation for, general provisions 293
troops, sanitary 33, 95, 99, 105, 110, 116, 122, 125, 145, 158, 159, 288, 291, 302, 303, (230), (232)
control of 291
messing of, see "messing."
position of, on the march 105, 122, 158, 159, 302
with advance guards 99
with outposts 125
with rear guards 116
Scales and contour intervals of maps and sketches 59
Scattered or large forces, issue of orders to 72
Screen, cavalry 43, 44, 94, 103, 130, 158, 268
Search for wounded and dead 304, 305, (188)

Searchlights, use of with outposts 125
Secrecy, importance of, in night marches 161
in patrolling 47, 51, 133, 138
Secret messages to be in cipher 65
Secret service, organization and control of 17, 21, 38
Sections of a defensive position, extent of 275, 278
outpost positions, to be clearly defined 127, 141
Security, service of, see "**service of security.**"
Seizure and use, or destruction of, war materials, public or private ..... (199)
Selection of patrol leaders 50
posts for sentinels on outpost 132, 133
reconnoitering detachments 48, 50
shelter during mobilization 182
sites for camps 56, 126, 153, 155, 171, 181–183, 185, 186, (223), (224)
for defensive positions 273, 274
Sentinels at car doors in movements by rail 247
double 133
on outpost see "**outpost.**"
over sanitary formations and establishments 295, (188)
over water supply in camps 187, 190
Separate brigade, defined 4
Separation of troops from their animals during movements by rail 203, 242, 244
Sequence of paragraphs in a field order 86, 87, (206)
Service of defense, line of communications ..... (226)
Service of information 36–67
information, action of commander of troops in the absence of 38
discussion of in presence of civilians prohibited 40
division, employment of spies by 38
establishment of 17, 38
examination of deserters, prisoners, inhabitants, etc 38
maps, use of by 37, 38
post and telegraph offices, searches of 38
false, when spread 40
given to newspaper correspondents, by whom 41
military, classification of 36
sources of 37
transmission of 61–67
received by any person in the military service to be promptly reported 39, 53
maps, field, etc 38, 50, 59, 127, 270, (55), (204), (205)
messages, see also "**messages, field**" 57–60
patrolling, see also "**patrols**" 47–54
reconnoissance, see also "**reconnoissance**" 42
aeronautical 56, 260
by divisional cavalry 42, 45
independent cavalry 42, 43, 44, 253, 268, 270
infantry 42, 46, 132, 133, 138
in force 55
reconnoitering detachments, see "**reconnoitering detachments.**"
reports, see also "**messages, field.**" 58
secret service, organization and control of 17, 21, 38
seizure of public or private appliances for the transmission of news 38, 51, (199)
transmission of information, see also under "**messages, field**" 61–67
war diaries 17, 60, 213

Service of military railways, line of communications ..... (227)–(229)
Service of security 94–141
advance guards, see also "**advance guards**" 45, 94, 95, 97–111
cavalry, infantry, and artillery detailed for 95
compliments and salutes by troops on 95
definition of 94
engineer, signal, and sanitary troops detailed when 95
field trains for troops on 95
flank guards 45, 94, 95, 112–114, 146
general principles 94–96
integrity of tactical units to be preserved when practicable 95
number of troops detailed for, not to exceed necessities 95
outposts, see also "**outposts**" 45, 94, 95, 123–141
patrolling, see also "**patrols**" 47–54
rear guards, see also "**rear guard**" 45, 94, 95, 115–122, 159, 282
reconnoitering detachments, see "**reconnoissance**" and "**reconnoitering detachments.**"
security for a command field order issued for, see also "**orders, field**". 95
how provided 94
large commands, details for, general principles governing. 95
security, responsibility for—
at a halt and in camp 17, 48, 95, 124, 153, 187, (207)
in an advance 17, 48, 95, 98, 112, 115, 122, 158, (207)
in a retreat 17, 48, 95, 111, 112, 115, 158, (207)
strength of covering detachments 45, 95
Service of supply, see also Appendix H 193–227
accountability 22, 204, 213, 218
advance supply depot, location of, to conform to operations 200, (225), (227), (230)
area to be covered by requisitions 198
bakeries, blacksmith shops, etc., use of, in theater of operations 198, 212
bakeries, field and local 31, 212
bread, fresh, issue of 212
base depot, where located 199, (225)
base depots, how filled 202, (226)
base, temporary, establishment of 202, (224)
contributions, definition, collection, and disposition of 198
coordination in transportation secured by supervision of commanders 195
depots of supply ..... 12, 199, 200, 202, 204, 208, 217, 223, 226, 306, (128), (222), (224)–(227), (229)–(233)
advance 199, 200, 223, (225), (227), (230)
ammunition 199, 217, 223
animal 199
base 199, 202, (225), (230)
branch 12, (227)
forage 199, 204
military railway ..... (229)
movable 200, (225)
reserves of men 202, (128)
sanitary 199, 226, 306, (128)
sub 199, 200
subsistence 199, 208
duty of commander of line of communications to supply the army 12, 199, (224), (225), (226)
fuel and forage, see "**forage,**" "**grain,**" and "**fuel.**"

Service of supply—Continued.
funds, movable property, etc., use of, for military operations..... (199)
head of line of communications, wagon companies for each division at..... 199
line of communications..... (224)–(227), (230)
looting or pillaging forbidden..... 152, 198, (197), (198)
meat, fresh, issue of..... 211
movable supply depot, use of..... 200, (225)
property of institutions, public buildings, etc., laws of war governing..... (199)
purchase of supplies..... 197, (198)–(199), (226)
quartermaster corps, duties of..... 22, 195, 203–213, Appendix H
organization of..... 3, 16, 29
quartermasters, duties of, with field trains and wagon convoys. 145, 164
refilling points..... (227)
requisitions, direct, or foraging, how made..... 198, (199)
when and how made..... 197, 198, (198)–(199), (227)
reserves of men, where held..... 202
rolling reserve, description and use of..... 201
sales stores, when and how provided..... 206, 209
soap, candles, and matches, issue of..... 205
sources of supply..... 196, (226)
in theater of operations to be utilized..... 196, 198, 204, (42), (226)
subdepots of supply, establishment of..... 200
subsistence, see **"ration," "rations," and "messing."**
for patrols, how provided..... 51
supplies, accountability for..... 22, 213
subsisting by billeting, when resorted to..... 198
in the field, methods of, see also **"messing," "rations,"** etc..... 207–213
supplies, accountability for, during active campaign..... 22, 204, 213, 218
and money, requisition and levies of..... 198, (198)–(199)
carried by subsistence and forage wagons..... 201
collection of, into depots..... 12, 198, Appendix H
for field forces, to whom consigned..... (227)
for field service, permanent camps and reserve, duty of commanders to keep equipped with..... 203
for field service, permanent camps and reserve, should be kept on hand for troops at war strength..... 203
for permanent camps, how marked and stored..... 203
for reserve, how marked and stored..... 203
gathered by advance guards and independent cavalry.. 198
impressment of labor and means of transportation to collect..... 198
issued to division trains direct..... 199
methods of issue of, from supply trains..... 201
nature and amount of, commander of field army to indicate..... 12, (226)
pay or receipts to be given for requisitioned..... 198, (198)
requisitions for, generally function of line of communications..... 12, 198, (227)
reserve, to be taken on the march..... 143
sanitary, how carried on the march..... (42)
when obtained by purchase, when by requisition. 197, (198)–(199)

Service of supply—Continued.
supply departments, administration of 22
establishment of bases of 12, 199, 202, (225), (230)
depots of ..... 12, 198, 199, 200, (224)–(227), (230)
line of communications for .. 12, 199, Appendix H
trains, see also under "**trains.**"
ammunition, supplies carried on 219, 224, 235, (42), (227)
combat, supplies carried on 214, 220, 222, 232, 234
field, supplies carried on 201, 207, 208, 230–232, (227)
pack, supplies carried on 222, 237, (164)
supply, supplies carried on 201, 235, (42), (227)
sergeants, company mess, battalion supply, and cooks, during combat ..... (footnote) .. (140)
Service of the interior ..... (222)–(224)
Service of the theater of operations ..... (222), (224)
Shelter ..... 177–19)
billeting, accommodations in 178, 179, 180, 182
definition of 180
in enemy territory 179, 184
in local insurrection 178
in time of peace 178, 180
in time of war 179, 180, 183
on the march 184
private buildings, families not deprived of bedrooms or kitchens 179
families not to be removed from, etc 179, 180
public buildings, use of, in 178, 179
subsisting troops by 198
bivouac, definition of 180
bivouacs, artillery 189
cavalry, advance, and independent 141
beds in 190
for reserves 191
in line of battle 125, 191
position of officers 191
on the march 153, 184, 187, 189
provided for in halt order 153
rules of sanitation in 190
when resorted to 187, 189
camp, ambulance company, form and dimensions of 301, (120)
artillery battalion, form and dimensions of 186, (120), (214), (215)
cavalry squadron, form and dimensions of 186, (119), (214), (215)
definition of 180
field hospitals, form and dimensions of 301, (120)
infantry regiment, form and dimensions of 186, (121), (214), (215)
wagon convoy 171, (108)
camps, arms and equipment, where kept 190
auxiliary division 10
bathing and washing clothes 187, 190
care of troops in 190, 214–216, 288
casual, for sanitary troops 306
concentration, *see, also,* "**Concentration camps**" ..... (223), (230)
under command of whom ..... (223)
convalescent 306, (232)

Shelter—Continued.
camps, during sieges 192
establishment of kitchens in 187
messes for 215
near villages and farms ..... (122)
expedients in 190, 216
field bakeries may be assigned to certain 31
followers and retainers in 21
guards over water supply in 187, 190
guards, provost, charged with police of 152
or camp 15, 152, 187, 190
incinerators, construction and use of 190, 216
infirmaries, establishment of, in 301
integrity of units to be maintained 186
kitchens, location of 190, (119), (120), (121)
latrines, construction and location of 190
location and establishment of corrals, wagons, and pack trains .. 182, 186, 187, 190, 301, (119), (120), (121)
general headquarters 182
medical officer should assist in selection of sites for 185, 187, 288
messing in 214, 215, 231
picket lines, location of ..... 186, 187, (119)-(121)
police of 146, 190
rules of sanitation to be observed in 190, (79)
sites, change, when indicated 185
sites, conditions governing selection of 56, 126, 155, 171, 181, 182, 183, 185, 186, (223), (224)
tactical considerations paramount to sanitary, when 183, 185
tentage, allowance of 181, 231
washing clothes and bathing 187, 190
water supply, conditions for 151, 182, 185
doubtful in quality to be boiled 151, (123)
during sieges 192
for several commands, guard over regulated by senior 190
guards over in establishing 187
sources of, examined by experts 151, 288
cantonment, definition of 180
cantonments, conditions to be fulfilled in 182
development of 180
during mobilization 182
sieges 180, 192
expedients in 190, 216
field bakeries 31
rules of sanitation in 182
when resorted to 180
permanent or maneuver camps—
animals and wagons for troops proceeding to 242
assignment of troops to, during mobilization 182
assignment of troops proceeding to 182
baggage, allowance of, in 231, (148), (149)
bakeries, field, may be assigned to 31
bakeries, improvisation of 216
conditions governing selection of, during mobilization 56, 182
cots or bunks to be provided 190

Shelter—Continued.
permanent or maneuver camps—Continued.
depots and storehouses, locations of 182
expedients in lieu of sewerage in 190
hospitals, location of, in 182
kitchen waste, disposal of, in 216
laid out by chief engineer of an army 19
medical inspection of troops to be made before departure for 292
staff officers to meet and personally conduct incoming troops 182
supplies for, how marked and stored 203
should be kept on hand for troops at war strength 203
responsibility of commanders to keep command equipped with 203
tentage, allowance of 181, 231, (148), (149)
shelter during mobilization 182, (223)
general principles governing 56, 177–181, (223), (224)
in campaign 182–192, (223), (224)
on practice marches and at maneuvers 181
types, definitions, etc 180
temporary camps, animals of sanitary troops to be tied to train picket line 186
baggage allowance 231, (147)
beds in 190
disposal of refuse in 216
field wagons may be placed on flanks of companies 186
improvisation of shelter in 183, 189
kitchens, care of 216
establishment of 187
improvisation of 216
location of ..... 190, (119)–(121)
on the march 56, 126, 153, 155, 171, 181, 183, 184, 185, 186, 187, 189
tentage, allowance of 181, 231, (147)
urine tubes, use of, in camps, etc ..... (124)
Sheltered communications between supports and fire trenches 277
Shrapnel, beaten zone of 255
Sick and wounded, see under "**sanitary service.**"
Siege artillery 10, 28
Sieges 19, 124, 125, 139, 180, 192, 262, (197)
Sieges and bombardments, laws of war governing ..... (197)
Signal troops, see also Appendix H.
action of in combat 260, 276, (211)
air service of the 56, 260, 313, (34)
camp of battalion of ..... (120), (216)
detailed on service of security, when 95
duties of, in general 20, 32, 56
duties of with regard to reporting information obtained 39, 40, 41, 53, 62, (86)
fords for depths of 149
marches of, see "**marches.**"
organization of 20, 32, (33), (34), (232), (233)
aero-wireless battalion ..... (34)
field battalion ..... (33)
field company ..... (33)
telegraph company ..... (232), (233)
position of, on the march 145, 158
rail transportation for 249

Signal troops, road spaces ..... (214)
service of lines of communication by 20, 32, (225), (227)
to be individually mounted, or on vehicles 32
use of, generally controlled by supreme commander .. 20, 99, 110, 125
with advance guards 95, 99, 107, 110, 125
flank guards 95, 112, 125
line of communications ..... (225), 227), (232), (233)
outposts 95, 125, 136
rear guards 95, 120
Signals, trumpet for striking camp, for halts on marches, etc 146, (77), (96)
on outpost 124
used by reconnoitering detachments 54, 138
Signatures, field orders ..... 88, (206)–(213)
hour of 74
Signs, conventional, and abbreviations in sketches ..... (204), (205)
of the enemy 52
Situation, estimate of, in framing field orders 75
Size of trains, rail transportation 240
Sketch, outpost 59, (82), (204), (205)
Sketches, use of to supplement messages 56, 59, (82), (204), (205)
Sleeping cars, when provided for officers and men 243
Slopes, practicability of ..... (219)
Soap, candles, and matches, issues of 205
Sources of information 37
Space occupied by forage and subsistence ..... (217), (218)
Spaces and dimensions of camps ..... (216)
occupied by units of column en route 144, 164, 165, (214), (215)
Spare animals ..... (40), (41)
Speed, rate of, of messengers 64
Spies, employment of 38
laws of war concerning ..... (197)
Spy, definition of a ..... (197)
Squadron, see under "**commanders in the field**" and "**organization.**"
supply sergeants, duties of, in combat ..... Footnote (140)
Staff corps, organization 29
Staff for commanders in the field ..... 16–22, (231)–(234)
Staff officer to personally conduct troops to mobilization camps 182
Starting, hour of, on marches 146
or initial point of the march 144
Station, dressing, first aid, for slightly wounded, rest, etc 260, 303, 308
of ammunition trains during combat 159, 219, 221, 223, 260, 276, (212)
Stations, railroad; hospitals, depots, and storehouses, located near 182
Stock trains, with or closely following troops in mobilization 203, 242, 244
Stragglers on the march 21, 152, 159, (93), (98)
Straggling on the march, duty of all officers and noncommissioned officers to prevent 152, (93), (98)
Streams, crossing of 149
designation of banks of in orders and messages 76
fordable and not fordable, how indicated in sketches ..... (205)
Streets in camp 190, (216)
Strength and composition of advance guard 45, 95, 99, 110, 111
flank guards 45, 95, 112
outposts 45, 95, 125, 135
rear guards 45, 95, 116, 118, 120
Strength of covering detachments 45, 95
passing troops, how estimated 52

Strengthening defensive positions, see also "**trenches**"... 252, 256, 277, (220), (221)
outpost positions, see also "**trenches**"..... 126, 131, 256, 277, (220), (221)
Submarine cables connecting occupied with neutral territory, destruction of. (199)
contact mines, laws of war concerning..... 312
mine and torpedo defense..... 28
Subordinate commanders, see "**commanders in the field, subordinate.**"
Subordinates, province of should not be trespassed upon in orders..... 79
Subsistence, see "**messing**," "**messing arrangements**," "**ration**," "**rations**," and "**service of supply.**"
Succession to command..... 13
Superiority of fire, necessity of obtaining and maintaining..... 251, 254, 260, 261
Supplies, see "**service of supply.**"
Supply, see "**service of supply.**"
Supply trains, see also under "**trains**"..... 34, 201, 236, (227)
Support commander, advance guard..... 104, 110
Supporting troops in combat.... 258, 260, 261, 265, 267, 269, 271, 272, 276–278, 281–284
Supports, advance guard..... 104, 110
and reserves, cover for, see also "**trenches**"... 126, 131, 256, 261, 276, 277
outpost..... 131
may be omitted for a small command..... 137
rear guard..... 118
Supreme commander, see under "**commanders in the field.**"
Surplus kits, weight of, etc..... 231

T.

Table, ammunition supply, cavalry division, how carried and distributed.. (143)
divisional artillery, how carried and distributed (142)
field army, how distributed..... (144)
small arms, division, how carried and distributed..... (139)
front occupied by intrenched troops..... 278
march..... (207)
personnel of line of communications..... (231)–(234)
ranges, rifle, and artillery..... 255
ratifications to conventions, etc..... 314
road spaces and dimension of camps..... (214)–(216)
tentage and baggage allowances..... 231
weights, measures, and practicability of slopes..... (217)–(219)
Tables, organization..... 24–35, (231)–(234)
Tactical and strategical operations prescribed by field orders..... 69, 70
considerations govern in selection of camp sites, when..... 183, 185
employment of the several arms..... 257
organizations, how designated in field orders..... 90
units, organizations which are..... 4
Tags, diagnosis..... 303
identification..... 297
Tail and head of column defined..... 76
Telegrams and mail matter may be seized..... 38, 51, (199)
Telegraph messages always handed to operator in writing..... 62
Telegraph service, line of communications..... (226), (227)
Telephone, parties concerned to do talking if practicable..... 62
Tentage and baggage, field allowance of..... 181, 231
permanent or maneuver camp, allowance of..... 231
Tents, shelter, use of on outpost..... 191, 192

Time, length of, for halts 148, 160
of return to be stated in patrols' instructions, when 49
starting the march 146, 148
Titles of medical officers 290
Tonnage, displacement, freight, gross, and register, definitions of ..... (218), (219)
Tonnage tables ..... (217)–(219)
Tools, intrenching, invariably carried by infantry into action ..... (161)
on combat wagons also 220, 234
Torpedo defense, coast artillery corps charged with duty of 28
Trains, ambulance, sick and wounded assigned to, when 302
company 60, 302
ammunition, cavalry division, organization of 224, (42)
commanders of, duties during combat 219, 224, 235, 260
communication during combat between commanders of and division and artillery commanders 219
definition of 235
diary 60
division, organization of 219, (42)
position of in combat 159, 219, 221, 223, 260, 276, (212)
marked by flags and lanterns 219, 223
on the march 145, 159, 221, 223, (212)
rate and length of march of ..... (94), (95)
road space ..... (214)
supplemented by supply trains, when 217
supplies carried on 219, 224, 235, (42), (227)
balloon, position of, on the march 159
bridge, light, may be attached to cavalry division 7
position of, on the march 105, 159
combat, ambulances attached to 234
ammunition, issue of from, prior to combat 222, 223
ammunition wagons with ..... (40)
artillery 158, 220, 223, (41), (102), (142)
artillery, mountain ..... Footnote (41)
assembled in rear of regiments, when 220
assigned to battalions and squadrons 234
bandoliers of ammunition in each wagon ..... (139)
issue of, prior to combat 222
battery ..... (41)
cavalry 220, 222, 224, (40), (41)
commanded by whom 234
cooking utensils carried on, when 214
defined 234
definition of artillery ..... 223, and footnote (41)
engineer and signal battalion 234, (41)
delivery of ammunition from, use of lead mules for 222, 260
during mobilization 203, 242
engineer battalions 234, (41)
equipments of men carried on, when 232
grain for animals carried on, when 234
infantry 220, 222, (40)
intrenching tools carried on 220, 234
issue of ammunition from to cavalry 224
issue of ammunition from to engineer and signal troops 221
join field trains when 220
led horses with ..... (40), (41)
litters, company, carried on 234, 293

Trains, combat loads, infantry and cavalry, consist of what..... 220, 234
of meeting columns..... 157
of the units of a division, table of..... (40), (41)
pack mules with..... (40), (41)
pack outfits carried on..... 234
position of in combat..... 159, 276, (139), (142)
position of on the march.... 145, 158, 159, 220, 224, (139), (142), (143)
rendezvous station for, during combat..... 219
replenishment of ammunition for..... 217, 219, 220, 223, (227)
responsibility of battalion commanders concerning..... 220, (41)
road space..... (217)
signal battalions..... 234, (33), (41)
supplies carried on..... 214, 220, 222, 232, 234
under command of whom..... 234
orders of battalion commander..... 220, 234, (41)
wagons and other vehicles with..... (40), (41)
commander of, definition and duties of..... (42)
consolidation of field, supply, ammunition, and pack in small commands..... 159
convoy, wagon, advance cavalry of advance guard, distance from train..... 168
advance guard, distance from train..... 168
commander, reconnaissance by.... 168
attack of..... 173
broken wagons..... 165
camps for, and their security..... 168, 171
commander of..... 166
composition and strength of escort..... 166
conduct and rate of march..... 165, 166
defense of..... 172
definition..... 162
disposition of captured..... 173
distribution of troops of..... 167
distances between sections and wagons..... 165
division of into sections and commanders thereof. 164
halts..... 165, 166, 168, 171
herding in..... 171
main body of escort, position of..... 169
officers casually with..... 166
organization of each section..... 164
parking, when and how done..... 166, 168, 171, 172, (108)
passage through defiles..... 168
police guards for..... 164, 166
rear guard, position and strength of..... 170
rate of march of..... 165
road space of..... 164
security of, how provided..... 166, 171
size of, rule for..... 164
slowest teams to be in lead..... 165
transportation of, generally in charge of quartermaster..... 164
typical..... 163
when to be destroyed..... 172
field, accompany outposts when..... 95, 125
artillery, light, horse, and mountain..... (41)
at a halt..... 145, 186

Trains, field, baggage and tentage carried on 231, (227)
battalion, definition of ..... 230, footnote (41)
broken-down wagons 159, 165
coast artillery corps ..... (31), (40)
definition ..... 230, footnote (41)
diary 60
division, branch supply depots, or stations kept in reach of. 12, (225)
division of, into groups 230
during mobilization 203
retreat 159, (212)
duties of guards for 228
of quartermasters with 145
company, definition ..... 230, footnote (41)
convalescents and noneffectives as guards for 233
empty wagons of, may be used for supply 208, 230
equipment of men may be carried on, when 232
guards and escorts for 159, 162, 228, 233
in changing station marches 155
inspection of, for unauthorized baggage and vehicles 228
litters carried on, when ..... footnote (150)
load, normal, for wagons of 229
not to interfere with movement of troops 159, 260, 276
of a convoy escort 165
of advance guards 95, 99
of flank guards, position of 112
of meeting columns 157
of troops on the service of security 95, 99, 112, 125
position of, during combat 159, 260, 276, (212)
camps and bivouacs on the march ..... (120)
on the march 122, 145, 155, 158, 159, 230, (212)
rate and length of march of 155, (94), (95)
rations, carried on in campaign 207
regimental, definition ..... 230, footnote (41)
of a division, consolidation by brigade 159
consolidation of all in rear of division. 159
small command, consolidation with the supply, ammunition, and pack trains 159
two or more divisions on a single road, consolidation with the supply trains in rear of last division 159
road space 159, (214), (215)
supplies carried on 201, 207, 208, 230–232, (227)
teamsters and packers, how armed 228
united with supply trains, when 159
use of, in the issue of rations from supply depots 208
lanterns with, during night marches 161
wagons, broken down 159, 165
for brigade headquarters 15, 230, (41)
for cavalry units and sanitary troops attached ..... (40)
for coast artillery units 28, (40)
for companies, location in temporary camps 186
for division headquarters 15, 230, (41)
for engineers, units of ..... (41)
for infantry units and sanitary troops attached ..... (40)
for light artillery units and sanitary troops attached .. (41)
for practice marches 156

Trains, field, wagons for regimental sanitary troops ..... (40), (41)
for signal troops, units of ..... (41)
how to be marked 230
number of, when increased 231
of sutlers, correspondents, etc 230
forage for, see **"forage"** and **"grain."**
guards and escorts, armed, for convoy 162, 166, 174–176
for field 159, 162, 228, 233
on railroad troop 247, 248
special, for ammunition, supply, and pack 159
organization of, ammunition, division ..... (42)
battalion combat ..... (40), (41)
field ..... (41)
combat ..... (40), (41)
"commander of trains" ..... (42)
company field ..... (41)
division ammunition ..... (42)
auxiliary, ammunition ..... (42)
bridge, equipage, heavy ..... (30)
light ..... (30)
cavalry, ammunition and field ..... (42)
combat and field ..... (40), (41)
supply ..... (42)
field, company, battalion, regimental, and division ..... (40)–(42)
pack ..... (40)
ponton ..... (30)
regimental field ..... (41)
sanitary mounts and transportation ..... (36), (38)
squadron combat ..... (40), (41)
supply, division ..... (42)
troop, field ..... (41)
wagon company ..... (39)
pack, consolidation of with field, supply, and ammunition trains 159
cavalry division, usually accompanies supply train 7, (42)
division, usually accompanies supply train 6, 236, (42)
length of march for 237
loads for animals of 237
organization of ..... (40)
position of, in combat 159, 260, 276, (212)
position on the march 158, 159, (212)
road space of ..... (214)
station of, in combat 159, 260, 276, (212)
supplies, carried on 222, 237, (164)
use of, in combat 222, (164)
use of, to supply troops 237, (164)
parking of, when and how done 166, 168, 171, 172, (108)
pioneer, in convoys by rail 175
railroad, see **"rail transportation."**
space occupied by, on the march ..... (214), (215)
stations of ammunition, in combat 159, 219, 221, 223, 260, 276, (212)
combat, in combat 159, 276, (139), (142)
field, pack and supply in combat 159, 260, 276, (212)
supply, action of, during a retreat 201
auto wagons or trucks, use and capacity of 201

Trains, supply, cavalry division, definition of ..... (42)
wagons companies in ..... (45)
consolidation of, with field and pack trains 159
diary 60
disposition of emptied sections of 201
division, commanded by whom 236
complete, table 35
definition of ..... (42)
normally carry what 236
wagon companies in ..... (43)
issue of supplies from 201
organization of cavalry division 34, (42), (45), (46)
division 34, (42), (43), (44)
pack trains, etc., generally attached to 6, 7, 236, (42)
position of, in combat 159, 260, 276, (212)
position on the march 145, 155, 158, 159, 201, 236, (212)
rate and length of march of 155, (94), (95)
road spaces 159, (214), (215)
"rolling reserve," use of 201
special ..... (225)
supplies carried on 201, 236, (42), (227)
trucks, auto, use and capacity of ..... (129), (225)
use of, in supplying reserve ammunition 217
wagon companies with ..... 34, (42)–(46)
wagons carrying reserve sanitary stores with 236, 293, (42)
troop, see "**rail transportation.**"
wagon company, organization of 34
road space ..... (214)
wagons, ammunition, see "**trains, ammunition**" and "**trains, combat.**"
battery ..... (41)
broken down or stalled 159, 165
chess ..... (30)
combat, see under "**trains, combat.**"
and field, in divisions ..... (40), (41)
convoys of, see "**trains, convoy.**"
corral or park of 171
extra teams for, (see organization tables in text).
field, see "**trains, field.**"
and combat in divisions ..... (40), (41)
loads for, character of 229, 230, 231, 232, (227)
marking of 230
may be placed on flanks of companies in temporary camps 186
for postal service and contingencies 30
forge ..... (30)
instrument ..... (33), (41)
litters carried on ammunition 234, 293
loads for 220, 229–231
map ..... (29), (41)
pack, outfits carried on combat 234
ponton ..... (30)
spring 30
standard army 229
store ..... (41)
supply, see under "**trains, supply.**"

Trains, wagons, teams for..... Footnote (21)
heavy bridge equipage..... (30)
tool..... (30), (41)
tools, intrenching, carried on combat..... 234
trestle..... (30)
Transmission of information..... 61–67
orders and messages, duties of all officers to assist in..... 62
Transport regulations..... 206, 249
Transportation, see also under "**trains.**"
brigade..... 15, 30, 33, 34, 230
by rail, see also "**rail transportation**"..... 203, 206, 238–248, (224), (227)–(229)
water..... 176, 203, 206, 249, (224)
division..... 15, 230, (35), (37), (44), (46)
facilities, line of communications..... 199, (227)
impressment of means of, during mobilization..... 198
requests..... 239
wagon, complete, of battalions and regiments..... (40), (41)
rate and length of march of..... 155, (94), (95)
Treatment of inhabitants in billets..... 179, 180
Trenches, communicating..... 277
concealment of..... 252, 277, (220)
construction of, under fire..... 260, 261, (220)
dummy, use of..... 277
extent of front covered by various units in..... 278
forms of..... (220), (221)
general principles for siting of..... 277
kitchen..... 216
ranges in foreground of to be measured and marked..... 126, 252, 277
splinter proofs..... 277
subordinate commanders to be prepared to construct and man..... 256
tools for constructing, carried invariably by infantry into action..... 256
tools for constructing, carried in combat wagons also..... 234
use of in the attack..... 256, 260, 261
defense..... 252, 256, 277, 280
on outpost..... 125, 126, 128, 131, 141
with wagon convoys..... 171, 172
Troops, artillery, cavalry, etc., see "**artillery,**" "**cavalry,**" etc.
care of..... 151, 190, 214–216, 288, 302–304
leading, definition and duties of..... 111
to be informed of lengths of halts..... 142
Truce, flag of..... 106, 133, (84), (196), (197)
Trumpet calls and signals on the march..... 146, (96)
outpost..... 124

U.

Unit, incomplete, method of naming in orders..... 90
company, officer to march in rear of, when..... 151
Units, administrative and tactical..... 4
order of march of, see also under "**march**"..... 145, 158, 159
sequence in which referred to in orders..... 87
Urine tubs, use of in company street..... 190
Utensils, cooking, to be kept scrupulously clean..... 216
when carried on combat trains..... 214

V.

Vehicles, authorized only, accompany military trains 228, 230
Verbal orders, important, to be recorded 72
method of communicating 72
to be repeated by bearer 73
Videttes 141
Villages, halts made in or near when 148
how entered by patrols 51
wagon convoys avoid the use of as camp sites 171
Visiting patrols 138
Visual signaling, use of to transmit information 61

W.

Wagons, see under "**trains.**"
War correspondents 41, 230
diary, definition and use of 60
kept by whom 17, 60, 213
laws of 308–314
prisoners of ..... 21, 23, (194)–(196)
bureau of information (or inquiry office) for 23, (195), (196)
Warning to be given of change of rate of march 147
Washing clothes and bathing, place to be designated for 187, 190
Watches, part of equipment of patrols 50
set by unit commanders before starting march 148
subordinate commanders, etc., to regulate by headquarters 81
Watchword, use of, in night attacks 267
Water convoys 176
boiling of, details for 190
rules for 190
doubtful, to be boiled 151, 190
drinking, quantity required per company per day 190
duties of advance guard in connection with ..... (98)
for bathing and washing, places to obtain designated 187, 190
halts for on the march 148, 151
supply conditions for 151, 182, 185
during mobilization 182
sieges 192
guards over 187, 190
regulated by senior officer 190
sources of, examination of, by experts 151, 288
when carried in wagons ..... (98)
transportation, see "**transportation by water.**"
Watering of animals, see under "**animals.**"
troughs for animals 190
Weather, hot, march formations in 145
shade for animals to be provided 190
Weights, measures and practicability of slopes, table of ..... (217)–(219)
Wire entanglements, construction of in the defense ..... (174)
use of metal or other portable shields in the cutting of ..... (166)
with convoys 171
outposts ..... (79)
Wireless battalions, signal troops ..... (34)
telegraph, use of in transmitting information 61, 62

Withdrawal of troops from action 121, 265, 282
Wood, see "**fuel.**"
Wounded and sick, see "**sick and wounded**" under "**sanitary service.**"
Written orders, when resorted to 72

Z.

Zone, beaten, of a shrapnel 255
Zone of the line of communications ..... (225)-(229)
channels of correspondence ..... (229)
general instructions ..... (225)-(226)
service of defense ..... (226)-(227)
military railways ..... (227)-(229)
supply, sanitary, and telegraph service ..... (226)-(227)

DATE DUE (DA Pam 28-30)

[illegible] 1977		
NOV 14 1980		
[illegible]		

LIBRARY
U.S. GENERAL SERVICES SCHOOLS
FORT LEAVENWORTH, KANSAS

COMBINED ARMS RESEARCH LIBRARY
FORT LEAVENWORTH, KS
3 1695 00181 770 9