

**The Army at a Halt;**  
**in Cantonment, Camp**  
**and Bivouac.**

Course in Organization and Tactics,  
Lecture No. 7,  
By 1st LIEUT. C. E. THORNE,  
12th Infantry,  
December 2nd, 1904.

Department Military Art,  
Infantry & Cavalry School.

# The Army at a Halt: In Cantonment, Camp and Bivouac.

---

LECTURE No. 7.

---

## GENERAL CONDITIONS.

In the preparation of this lecture no claim is made for originality. It is taken principally from the advanced sheets of the United States Field Service Regulations. The second volume of the General Staff by Bronsart von Schellendorf, Pratt's *Precis of Modern Tactics*, Shaw's *Elements of Modern Tactics*, Infantry Drill Regulations, 1904, and Woodhull's *Military Hygiene* were also consulted and freely used.

In dealing with this subject we find two forces or elements that are constantly conflicting with each other; namely, considerations for the health and comfort of the troops and tactical requirements. To say how far the one shall govern to the exclusion of the other, remains, in each particular case, for the general commanding to decide. During the early stages of a war while the troops are being assembled, equipped, and drilled, we find or should find, every possible means provided to insure their health and comfort; but when a campaign is fairly begun the health and comfort of the troops will often have to be sacrificed to the paramount consideration of tactics. Then it is that the generalship of the commanding officer is shown in his ability to harmonize the two. Lack of rest not only renders troops unfit for hard work and lowers their morale, but also diminishes their power of resisting disease. Hence, it is that all officers, having in view the ultimate efficiency of their commands, will secure for their troops, as far as practicable, their nightly rest; that is, avoid unnecessary night marches, alarms in camp, prevent dissipation and see that

troops that have been on night or other arduous duty get a chance to make up their loss of sleep and rest.

### *Need of Shelter.*

In order to rest well, troops must have shelter. Exposure to bad weather makes greater inroads on the numerical strength of troops than a severe engagement. Neglected animals suffer even more than men and their lack of condition will soon cripple a command. The kind and amount of shelter that can be provided will depend upon the distance from the enemy, the length of stay in one place, means available, and the season of the year.

The halts of an army in regard to the kind of shelter used are classified into cantonments and camps. If no shelter is used it is a bivouac. Some authorities call a camp with shelter tents a bivouac.

### *Cantonments.*

In cantonments troops occupy buildings in towns or villages or are sheltered in huts erected on camp grounds. The term implies a considerable length of stay, however, it may be for one night only. In time of peace, on occasion of local insurrection, riot, or disorder, public buildings should not be used for temporary shelter of troops except in case of great emergency ; private buildings should not be entered by troops without permission, except to prevent destruction or protect life. In time of war in our own country, temporary use may be made of buildings when absolutely necessary, as in the care of the wounded ; but as long as patriotic communities offer the use of buildings or when they can be rented at reasonable rates, seizure should not be resorted to except in response to the imperative demands of humanity. In the enemy's country, public and private buildings are available for the use of troops and may be converted into cantonments at will. Families should not be removed unless it is unavoidable. Cantonments often develop through improvements of camps (huts or temporary build-

ings taking the place of wornout tents.) During the suspension of hostilities awaiting the negotiation or ratification of treaties of peace, in occupation of hostile territory, and at sieges, cantonments may be utilized with advantage in sheltering troops, especially in cold or wet weather.

#### *Billeting.*

If in cantonment, the troops are assigned to households for provisions, as well as quarters, billeting results. In our army this would only be resorted to in the enemy's country and under circumstances which would render it impracticable to collect and issue the provisions available. When billeting is resorted to, the inhabitants should not be deprived of bed-rooms or kitchens.

#### *Camp, Bivouac.*

In a camp, troops are sheltered under canvas. In a bivouac, men rest on the ground without shelter.

### PREPARATION FOR WAR.

When war is imminent, and as a preparation to entering into a campaign, regular troops and volunteers mustered into service would be assembled at suitable places and formed into brigades, divisions, and army corps. As the troops arrive at the place of assembly they would be placed in camps; that is, under canvas, or in cantonments, sheltered in portable buildings, huts or temporary barracks. All danger from an enemy being excluded, the principal endeavor should be to provide for the health, comfort, and instruction of men and animals. These objects can best be attained in carefully selected and properly managed camps or cantonments. The largest command usually formed for administrative purposes at this stage is the army corps.

#### *Selection of Sites for Camp or Cantonment.*

Districts which are suitable for camps or cantonments of an army corps should be selected in time of peace, after

securing reports of experts on the character of the water supply and the salubrity of the country. The following requirements are essential :

1. There should be an abundance of open ground and rolling country suitable for the establishment of well drained camps.

2. Space should be ample to allow troops to camp at wide intervals and leave large grounds for exercise and instruction of troops.

3. The water supply should be excellent and abundant. Each brigade, and if possible, each regiment, should have an independent water supply which cannot be contaminated by drainage from other camps.

4. Several railroads with ample sidings, loading platforms, and switching facilities should pass through the district or be within easy reach.

5. There should be good wagon roads from railroad stations to various parts of the district so that the camps may be conveniently accessible.

7. Drainage should be so good that after a rain there will be no stagnant pools within 300 yards of the camp. The crest of a low ridge with gentle slopes is favorable for drainage.

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

### *Going Into Camp.*

All arrangements for the accommodation of troops should be complete before their arrival. If placed in camp, tents should be pitched and aligned, kitchens equipped, water supply arranged, and fuel delivered. Latrines require special attention; the completeness of their equipment will depend upon the length of time they are to be used. Staff officers should be ordered to meet all troops upon arrival at the railroad station and personally conduct them to their camps. Headquarters of the command should be centrally located with mail, telegraph, and telephone facilities.

Similarly, division, brigade, and minor headquarters should be centrally located in respect to their troops and connected with headquarters by wire. There should be no impassable obstacle to separate the troops and there should be good roads and paths connecting the various headquarters. Depots and store houses should be placed at railroad sidings and no part of the camp should be more than five miles from them. Hospitals should not be far from a railroad station, in order that their evacuation by rail may be facilitated. Unless absolutely necessary, mobile field hospitals should not be set up at this time, although their personnel may be utilized in the care of the sick in local hospitals.

The location of troops in camps should correspond to their organization ; that is, regiments of the same brigade, and brigades of the same division should adjoin each other. Cavalry and artillery are usually at a greater distance from headquarters than infantry ; corrals, wagon trains, and pack trains are placed so as not to interfere with the comfort and cleanliness of the rest of the camp. Bridge trains should be located near a river in order that they may be given an opportunity for practicing bridging.

#### *Cantonments.*

If placed in cantonments practically the same considerations apply. In this case, buildings should have been arranged for, their capacity carefully computed and the troops assigned and conducted to their quarters as in the case of a camp.

#### *Concentration.*

As the time for operations approaches, troops will be drawn from preparatory camps and assembled into armies. Tactical considerations will now demand a closer degree of concentration and will control to a great extent the location of camps or cantonments. Army corps should, if possible, be placed side by side, each on a good road. The breadth of the camp or cantonment should be small as compared

with its depth, for when greater concentration is needed, it can be effected by closing up each corps on itself. This also has the advantage that the troops on outpost duty would not have to be changed. The cavalry divisions should be about a day's march in advance on the principal lines of approach. Out posts should be established whether needed or not, in order to train the men in this important duty, as the degree of efficiency with which this duty is performed when operations begin, will determine to a great extent the amount of rest the troops will gain. At this stage, troops will probably be sheltered in tents forming part of their equipment. In case tents are not available, and the weather permits, shelter tents may be used. Additional shelter may be improvised or troops may be cantoned in adjacent villages. Let us consider the latter method first.

#### CANTONMENTS IN THE ENEMY'S COUNTRY.

If in the enemy's country, buildings are seized without other hesitation than precaution against epidemic disease. Private buildings may be used to the extent necessary, beginning with the deserted and empty. Staff officers and one representative from each battalion, squadron, or battery, accompanied by some non-commissioned officers and orderlies should precede the column. The senior staff officer confers with such civil authority as may be present and makes an equitable division of the accommodations available into distinct sections and turns them over to the representatives of the various organizations ; the latter distribute quarters to their troops and furnish necessary guides. Unless the country is densely inhabited, or the force is small, shelter of this character will usually be inadequate and some will be forced to use shelter tents or bivouac. Villages and large farms often afford facilities as wells, cisterns, bakeries, blacksmith shops, material for repairs, fuel and forage, which contribute to the comfort of the troops, that are compelled to bivouac.

The same general principles as to the location of the various headquarters, in order to facilitate the transmission of orders, govern, as in the former case, except for that of the commanding general. In addition to the foregoing requirements, he must so choose the location of his headquarters as to facilitate the rapid transmission from the front of news concerning the enemy.

Hospitals should be established in the towns and villages occupied by troops for the reception of cases of slight illness and for those too ill to be moved. In all cases of sickness which promise to last for a considerable time, the invalid should be removed to hospitals established further in rear. When the troops leave the cantonment, the sick that are left behind may be handed over in case of necessity to the care of the resident civil doctors.

In all cantonments whether close or extended, the troops are more or less scattered through the villages and farmhouses and organizations are broken u p . Hence in the presence of the enemy, it is very important that places of assembly or rendezvous be appointed and the troops notified of their location, and the routes thereto, so that in case of an alarm, all would know exactly where to go and what to do. Their selection would depend upon the circumstances of each particular case, but it is necessary that there should be sufficient ground upon which to form, and that it should be behind a good defensive position.

### *Sieges.*

At sieges, on account of the long range of modern fortress artillery, camps of the main bodies of the investing force cannot be placed much nearer than five miles to the enemy's works, unless good cover is available. In order to guard against sorties a large proportion of the troops will be on outpost duty ; good shelter from which to recuperate after this arduous duty is desirable. Shelter at the outpost may be left standing from day to day, but when troops have

completed their tour of outpost duty they should be permitted to return to their own camps with the main body. Because of the danger of epidemics in the necessarily crowded camps of besiegers, the water supply and sanitary arrangements will require the most careful attention.

In all cantonments that have the element of permanency, there should be sufficient quarters for all including those on outpost duty. The men then have a natural interest in keeping them clean and will even go so far as to improve and repair them. Also the responsibility for their condition is more easily fixed. Again by clearing the troops out of certain buildings for a time an opportunity is given for thoroughly ventilating and cleaning them by fatigue parties left behind.

#### *On the March.*

Although our troops carry shelter tents and would usually go into camp, yet after a few battles it is doubtful if many such tents would be left, in which case, the troops would have to be placed in cantonments or bivouacked. Because of the necessity of keeping troops well in hand in the presence of the enemy, these cantonments present some perplexing difficulties, but to keep a command in bivouac any length of time except under the most favorable circumstances, would mean its most speedy sacrifice. Usually only the villages and houses situated on or close to the main road could be used. Every nook and corner, shed and loft, would have to be occupied to its fullest capacity. Even then many would have to bivouac in the yards, gardens, or along some hedge. The outpost would have to be exceptionally strong and pushed out to a much greater distance than if the troops were simply in bivouac, in order to allow for the additional time that would be required to assemble and form the troops. To insure fair play to the various fractions of a force in the choice of quarters, is a matter hardly possible, and the various troops must be content to take what luck brings them. If any particular body is found to invariably

fare badly in this respect, it can only hope for some compensation in the way of quarters when things take a more regular turn.

The first principle to be observed in quartering troops on the march is that no unit will have to re-trace its steps, if it can possibly be avoided. **The** second is that the troops should be distributed among the villages in such a manner as will best facilitate the re-forming of the column of march in order to resume the advance next day. Hence it is necessary to take into consideration the position of each organization at the end of the march, as well as the position it will occupy in the next day's advance.

In the presence of the enemy, the infantry occupies the villages nearest the front ; cavalry is quartered more to the rear or flank, preferably at farm houses where forage can be obtained ; artillery must be quartered where it will be protected by the other arms and on or near one or more good roads. When the enemy is near, the troops are closely packed into the villages, in close cantonment. When the enemy is more distant, more regard can be had for the convenience of the troops and a wide cantonment usually results.

### CAMP IN THE ENEMY'S COUNTRY.

Now let us suppose that instead of placing our troops in cantonment we had placed them in camp.

On account of tactical considerations there will often be but little choice in selecting the site for a camp. When a great battle is impending, troops may often have to camp many nights on ground that is objectionable from a sanitary point of view. When the enemy is more than two marches distant it will nearly always be possible to give weight to sanitary consideration, in which case and especially if the camp is to be occupied for some time, great responsibility rests upon the officers selecting the site. **The** most scrupulous cleanliness on the part of the troops cannot overcome the disadvantages of a bad site. Through no fault of its

own, a regiment thus situated may suffer greater casualties than it would in a long campaign. The senior medical officer should be required to make a special report on the quality of the water and the general healthfulness of the proposed site. But the commanding officer will be the final judge and should be thoroughly familiar with all the requirements of a good camp site. As far as possible, each camp site should fulfill the eight conditions required for permanent camps. Old camp grounds and vicinity of cemeteries should be avoided. Marshy ground and vicinity of stagnant water is objectionable on account of damp atmosphere and annoyance and infection of mosquitoes. High banks of rivers are generally good for camping, provided no marshes are near. A slope to the south, with woods or brush to break the force of the wind, is an advantage in the cold season. Closely cropped turf, with sandy or gravelly subsoil, is best; clay soil is damp. In the hot summer months, woods on high ground free from underbrush and thin enough for grass to grow freely, may form a comfortable and healthy site. The ground at the foot of a hill range nearly always has a damp subsoil, remains muddy for a long time, and is not suited to camping purposes unless separated from higher ground by a ravine. Thick forests, dense vegetation, made ground, alluvial soil, punchbowl depressions, enclosed ravines, and dry beds of streams should be avoided.

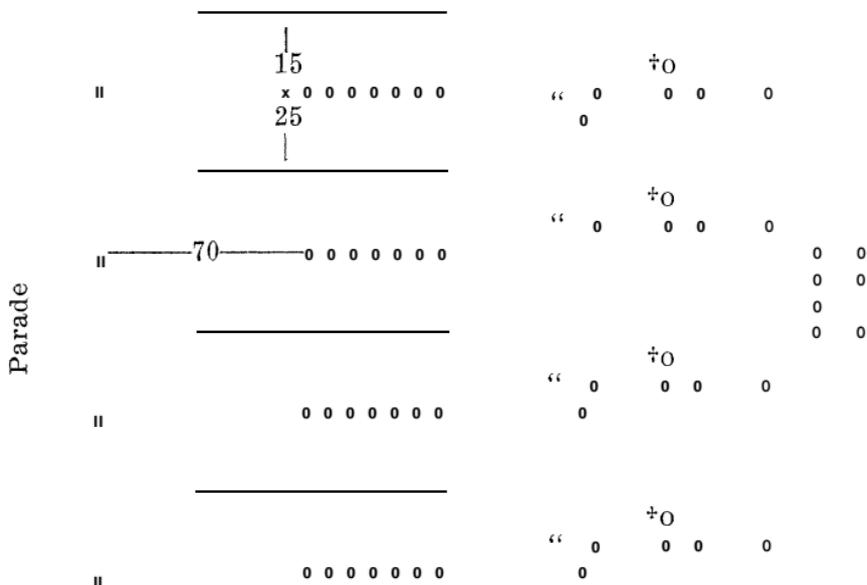
When practicable the camp site should be changed every two or three weeks. This is an additional precaution against epidemics and affords a change of scene. When camp ground becomes cut up and **dusty**, or when grazing or fuel are scarce, a change will be desirable.

#### *On the March.*

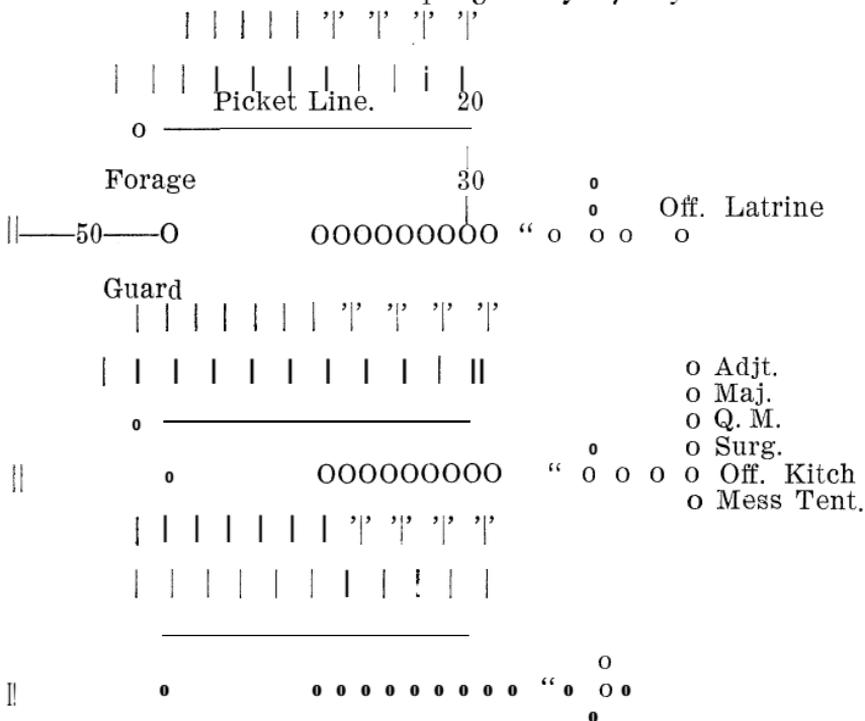
On the march, even though the camp is for but one night, the requirements of a camp site should be complied with as far as possible. Convenient access to water and supplies is much appreciated at the end of a tiresome journey,



Camp of a Squadron of Cavalry.  
 Dimensions of Camp: 175 by 275 yards.



Camp of a Battalion of Artillery.  
 Dimensions of Camp: 360 by 270 yards.



With shelter tents, the arrangement for each company will be in two lines, facing each other, with a distance of from 15 to 20 yards between lines ; this space forms the company street. A company of infantry thus occupies a space of 20 to 25 yards in depth. The picket lines of troops of cavalry will be about 40 yards apart, those of batteries about 100 yards. The shelter tents, all facing toward the head of the column, are placed in one row, about 15 yards in rear of the picket lines, or in two rows with 5 yards between rows. With common tents or wall tents, camp is formed in two lines for each company, usually, and in one or two lines for troops or batteries. With conical wall tents, a single row is the most convenient form for each company, troop, or battery. The tents of officers and non-commissioned staff officers, kitchens, and latrines for officers and men, will, whatever the kind of tents used, be placed approximately as shown in the diagrams above.

The positions of the color lines, guard tents, field hospitals, officers' horses, (infantry), and the transportation are prescribed by the commanding officer. In the cavalry, troop wagons may be placed at the ends of the picket lines when camp is for one night only.

While it is desirable to **occupy** ample space in camps, the form and size of the ground available will often require a modification of distances and intervals and other changes, all of which will be regulated by the commanding officer. When ample ground is available, picket lines for cavalry may be placed on the flank, between latrines and the mens' tents. The headquarters of regiments and brigades usually camp opposite the center of these units. In larger commands headquarters should be centrally located.

#### *Going Into Camp.*

A staff officer, with such assistants and orderlies as may be required, should precede the command by several hours for the purpose of selecting a camp site or asking higher authorities to point out the ground already decided

upon. After posting men to mark **out** the ground, the remainder of the party return to the command and guide its fractions to their allotted places.

To be able to rapidly form an idea of the space or room required, it is a good plan to have a small piece of cardboard, having rectangles cut out in it, representing on the scale of the map, the spaces required by an infantry and cavalry regiment and a battery of field artillery. The card applied to the map, enables the officer to judge at once whether the ground available is sufficient for the purpose.

The infantry stack their arms on the ground they are to occupy and remove their equipments ; the cavalry and artillery unsaddle or unhitch and tie their horses to the picket lines. The tents are pitched as soon as practicable, in the manner prescribed in Drill Regulations.

**The** guard proceeds to the place designated, and after posting sentinels as directed will pitch its own tents. Details should be made immediately to dig latrines and kitchen pits. Tents, company streets, and picket lines will be ditched if time is available. Watering places will be prepared when necessary. Fuel, forage, and supplies are procured by details of men when required. When straw, leaves, or boughs are at hand the men should be required to raise their beds off the ground.

#### *Camp Expedients.*

When camp is to remain for some time, the ground **should** be cleared of all underbrush. Rough chairs, benches, tables, bake ovens, filters, walks, shades over the mess tables, bathing and washing places, and windbreaks are camping expedients, which are readily constructed, and contribute greatly to the comfort of the men. In winter quarters the tents may be pitched on frames, bunks constructed, and the tents floored ; brick or stone foundations may be built for tent stoves. Watering troughs, shelters in cold weather, and shades in hot weather, facilitate the care of animals and help preserve their condition.

In campaign, places for the assembly of battalions and squadrons, or of larger bodies, to be used in cases of alarm by day or by night, and the positions to be occupied by the various units, together with the routes to be followed thereto, should all be designated as soon as the camp is formed.

### *Camp Duties.*

In a standing camp, the list of calls and routine duties correspond closely to the usual practice in garrison. On the march and in the presence of the enemy, these duties should be limited to what is considered absolutely necessary.

A camp should be thoroughly policed every morning after breakfast, all sweepings and refuse matter being carried off and burned. The tent walls should be raised and the bedding and clothing aired daily, weather permitting.

When tent floors rest on the ground, they should be raised frequently to permit a free circulation of air, and allow for inspection for particles of food or other debris that may have fallen through the cracks.

Watering, feeding, and grooming of animals take place at regular hours and under the supervision of officers. The arms and equipment are habitually taken care of in the tents of the men. The horse equipments of the cavalry are also placed in the tents, but in camps of some duration they may be arranged on racks and covered with ponchos or waterproof coats.

### *Water Supply.*

Upon arrival in camp the commander will designate places for drawing the drinking and cooking water, for watering animals, for bathing, and for washing clothing. The first should be highest up stream, and the others in the order named. Guards will at once be placed to prevent pollution and enforce the proper use of the water supply.

When several commands are encamped along the same stream this matter will be regulated by the senior officer. If the stream be small, it will be of advantage to construct

reservoirs by building dams. Small springs may be dug out and lined with stones, bricks, or empty barrels. Surface water is kept out by a curb of clay. Animals will, generally, in such cases, have to be watered from troughs or buckets.

Water not pronounced safe by the medical officer should be boiled 20 minutes, then cooled and aerated. A company will require at least two barrels of water daily for drinking purposes. The necessary vessels for boiling and cooling the water having been provided, a man should be specially detailed to attend to the water supply of the company.

### *Kitchens.*

On going into camp, kitchens should be promptly established at or near the places prescribed. Liquid refuse will be thrown into pits. Solid matter may be buried in trenches, but in permanent camps it should be collected in covered barrels or boxes and removed by police parties. When fuel is plentiful, a trench about one foot deep may be dug to contain the fire. Green poles or sections of iron pipes resting on uprights of suitable height, support the camp kettles.

If fuel be scarce, dig a trench somewhat narrower than the diameter of the camp kettle. The kettles rest on the ground, and the intervening spaces are covered with stones or clay, thus forming a sort of flue. The draft may be increased by adding or building a chimney of sods or stones at the leeward end and by widening the windward end. The trench should have a slight fall away from the chimney for drainage and to improve the draft. Four such trenches radiating from a common chimney will afford good draft whatever the direction of the wind may be.

Officers must insist upon scrupulous cleanliness of the cooking utensils and mess tables. The cooks should be required to be clean in their persons and neat in their appearance, and the ground about the kitchen and messing places should at all times be kept free from refuse and filth of all kinds. In permanent camps wire screens should be provided to protect food from flies.

*Ovens.*

When portable ovens are not available, improvised ovens take their places. They may be constructed of brick or stone, and covered with earth to better retain the heat. If these materials are not available, a simple method is to lay an empty barrel on its side in a depression, knock out one head, and plaster the barrel with 6 or 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 conveniently located, ovens may be excavated therein and used at once.

*Latrines.*

At the end of a march, latrines should be constructed as soon as tools are available. They will in all cases be located on the opposite side of the camp from the kitchens. They should be near the companies and so placed that drainage and overflow will not pollute the water supply. When the camp is for one night only a shallow trench will suffice. In more permanent camps, the trench should be about 2 feet wide, 6 feet deep, and 15 feet long. Seats and guard rails of poles or other material should be provided, and the place screened by brush, wattling, or old tent flies. As soon as filled within two feet of the top, such latrines will be discarded and completely filled with earth. All latrines should be filled up before marching.

In cold weather the contents of latrines should be covered once a day with lime, ashes, or earth. In warm weather, deposits should be covered as soon as made, and it may be necessary to post a sentry to enforce this order, or detail a man to do the work. Another satisfactory method is to burn out the trenches daily with leaves or straw sprinkled with kerosene.

In permanent camps and cantonments, temporary out-houses will generally be constructed of boards and so ar-

ranged as to keep the pits dark, or a system using zinc-lined troughs and odorless excavators may be adopted. Urine tubs should be placed in each company street at night and emptied immediately after reveille.

## IN THE IMMEDIATE PRESENCE OF THE ENEMY.

In the immediate presence of the enemy, it will be impossible to follow many of the foregoing requirements, but the commander, who shows the most skill in modifying them to meet the demands of tactics and, at the same time, provide for the health if not the comfort of his command, will stand the best chance of being victorious in the test of strength and endurance in the great battles of the future.

### *Bivouacs.*

The rule that the worst cantonment or camp is better than the best bivouac is one on which all authorities are agreed, yet bivouacs cannot always be avoided.

When troops remain in deployed formation after a battle, awaiting resumption of hostilities, they will generally bivouac on or near the position they occupy, in which case the officers bivouac in the center of their units. Reserves required to remain in a state of instant readiness may bivouac in column with a flank to the front, with the officers on the flank away from the direction of the enemy.

In some cases it may be difficult to put up shelter tents on account of lack of ground, for example, in marshy country or in a jungle, the troops may be forced to bivouac on the roads. In cantonments when the villages are crowded some of the troops may have to bivouac on the sheltered side of buildings. On the other hand, in fine weather in midsummer, or in the dry season in the tropics, shelter tents may be dispensed with as a matter of choice.

From a tactical point of view, bivouacs are very convenient but on account of danger to the health of the troops they should ordinarily not be resorted to except when absolutely

necessary. The bivouac should be in rear of the **position** to be held, but near enough to it to be occupied quickly in case of attack. Cavalry and artillery should not be placed so as to have close country in their front or on their flanks unless such ground is occupied by infantry.

When it is possible to exercise a choice the general **principles** of the selection of sites for camps will apply to bivouacs. The form of a bivouac should be practically the same as that of a camp, except that less space will be required. As soon as the military situation permits, camps should be substituted for bivouacs.

### AMUSEMENTS.

A word in conclusion concerning amusements: "In permanent camps or cantonments, constant occupation and amusements are indispensable for health and efficiency. A marching column is always healthy, and the sick list grows with the age of the camp. Excursions outside of camp lines, and expeditions conducted on military principles, are of double advantage.

In winter camps, systematic efforts to amuse the men are important. These may include dramatic and vaudeville entertainments, lectures on practical subjects by officers, and especially music. Martial music particularly appeals to most men, and good bands are hygienic agents.

The dreary monotony of winter camps, the limited quarters, poor opportunities for cleanliness, indifferent artificial light, long evenings and delayed dawns, are depressing enough and lead the unstable nervous equilibrium to seek relief through the abuse of cards, tobacco, and alcohol. This must be constantly remembered, and the horrible ennui be dissipated, if an efficient and hopeful command is to be maintained."—(*Woodhull.*)

GEORGE E. THORNE,  
*1st Lieut. 12th Infantry.*

December 2d, 1904.

## QUESTION SHEET

### *Lecture No. 7.*

1. What is the most important consideration in determining the location and arrangement of the camp when distant from the enemy? When in the presence of the enemy?
2. Why is the question of rest of so much importance to a command in the field, and how is it secured?
3. What is a cantonment? camp? bivouac?
4. Give the eight requirements of a good camp site?
5. In a camp how should the headquarters of the various units be located with reference to their own commands and to each other? How connected?
6. Where should hospitals and store-houses be located? Corrals, wagon and pack-trains? Bridge trains?
7. Where troops are to be quartered in towns or villages what measures should be taken to secure the equitable distribution of the buildings available and the prompt lodgement of the troops?
8. In order to prevent epidemics in camps of besiegers what requires the most careful attention?
9. In quartering troops on the march, what are the main points to be considered with reference to their distribution?
10. In selecting a camp site, mention three locations that should be avoided; three that offer favorable conditions for camping.
11. Draw the diagram of a camp of a battalion of infantry in column of companies. (Dimensions not required).
12. What is the approximate space occupied by a camp of a battalion of infantry? squadron of cavalry? battery of artillery?
13. Name four camp expedients that are easily contrived and which will contribute to the comfort of the men in a camp that is to remain for some time.
14. What measures are taken when in camp to facilitate the prompt assembly of troops in case of alarm?
15. What disposition should be made of all the refuse of the camp?
16. When camped along a stream what measures should be taken to secure the proper use of the water for drinking, cooking, bathing, etc.?

17. How should impure water be treated before being used for drinking purposes.

18. Describe the measures to be taken to secure the proper sanitation of the kitchens. Of the latrines.

19. How may an oven be improvised for field use?

20. What are some of the advantages and disadvantages of a bivouac?

21. In permanent camps or cantonments and especially in winter quarters, what is essential besides good sanitation to keep the troops in good spirits? How is this accomplished?

---

*“Whatever arguments may be drawn from particular examples, superficially viewed, a thorough examination of the subject will evince that the art of -war is both comprehensive and complicated; that it demands much previous study, and that the possession of it in its most approved and perfect state is always of great moment to the security of a nation.”*

WASHINGTON'S LAST ANNUAL MESSAGE.